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Naval Diplomacy Beneath The Waves:
A Study of the Coercive Use of Submarines
Short of War

by

Brent Alan Ditzler

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Thesis Advisor: Jan S. Breemer

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This thesis addresses one dimension of "naval diplomacy," namely submarine naval diplomacy. It examines the suitability and/or desirability of employing submarine forces for naval-diplomatic purposes. It reviews the historical record of "underwater gunboat diplomacy," the particular aims that its practitioners have sought to achieve, and it examines the opportunities and constraints for the assignment of submarines for future naval diplomacy purposes.

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Naval Diplomacy Beneath The Waves: A Study of the Coercive Use of Submarines Short of War

by

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Lieutenant, United States Navy
B.S., United States Naval Academy,1983

Submitted in partial fulfillment
of the requirements for the degree of

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ABSTRACT

This thesis addresses one dimension of "naval diplomacy," namely *submarine* naval diplomacy. It examines the suitability and/or desirability of employing submarine forces for naval-diplomatic purposes. It reviews the historical record of "underwater gunboat diplomacy," the particular aims that its practitioners have sought to achieve, and it examines the opportunities and constraints for the assignment of submarines for future naval diplomacy purposes.

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I. THE NATURE OF NAVAL DIPLOMACY

A. INTRODUCTION

The use of armed force short of war to gain political advantage has been practiced throughout history. Also historically, *navies* have commonly been the military-diplomatic instrument of choice for projecting--explicitly or implicitly--the threat of politics by other means. This has been especially so for the United States. According to Blechman and Kaplan's oft-cited study, naval forces participated in 177 out of 215 recorded incidents of U.S. military diplomacy between 1946 and 1975 [Ref. 1].

Naval forces are relatively unencumbered by territorial claims and enjoy world-wide mobility--freedom of navigation--without precipitating warfare. However, "freedom" does not imply that all areas of the world ocean are politically equivalent. In naval diplomacy there is a vast difference between the *political signal* sent by a nations naval combatant patrolling the high seas and that same combatant patrolling just outside an opposition's territorial waters in an adjacent bay or gulf. However, during peacetime the naval combatant is free to politically navigate with little risk of war, and during wartime some level of this geographic political differentiation is likely to remain exploitable. [Ref. 2]

This thesis addresses one dimension of "naval diplomacy," namely *submarine* naval diplomacy. Its purpose is to examine the suitability and/or desirability of employing submarine forces for naval-diplomatic purposes. It reviews the historical record of "underwater gunboat diplomacy," the particular aims that its

practitioners have sought to achieve, and it examines the opportunities and constraints for the assignment of submarines for future naval diplomacy purposes.

B. CONCEPTS AND DEFINITIONS

The first task is to explain what "naval diplomacy" is and what it is not. What follows is a review of candidate definitions from different recognized pieces of literature on the subject. The hope is that one accepted definition or, if necessary, an aggregate of accepted definitions can be used as a standard for this work. It is not implied that the references cited are meant to be exhaustive on the subject of naval much less military diplomacy; they are chosen for their focus on the *application* of theory, rather than theory itself.

Naval diplomacy is widely believed to have provided maritime powers with an effective tool of deterrence and coercion. James Cable in his seminal work, *Gunboat Diplomacy 1919–1979* [Ref. 3], provides this definition:

> Gunboat diplomacy is the use or threat of limited naval force, *otherwise than as an act of war*, in order to secure advantage, or to avert loss, either in the furtherance of an inter-national dispute or else against foreign nationals within the territory or the jurisdiction of their own state. (emphasis added) [Ref. 3:p. 39]

Addressing the larger question of the use of U.S. armed forces as a political instrument Blechman and Kaplan had the following to say:

> A political use of armed force occurs when physical actions are taken by one or more components of the uniformed military services as part of a deliberate attempt by the national authorities to influence, or to be prepared to influence, specific behavior of individuals in another nation without engaging in a continuing contest of violence. [Ref. 1:p. 12]

Bradford Dismukes and James McConnell [Ref. 4] built on the definition of Blechman and Kaplan concerning naval applications:

> Naval diplomacy is the employment of naval power directly in the service of foreign policy. Like all forms of diplomacy it is intended to influence the thoughts and actions of foreign decision-makers. It can be practiced in

cooperative ways--by employing naval forces to make goodwill port visits or to furnish humanitarian or technical assistance. But it has been of far greater consequence (though less frequently encountered) in its coercive forms, when naval forces are used to threaten, or impose, violent sanctions. [Ref. 4:p. xiii]

Geoffrey Till [Ref. 5] portrays naval diplomacy as follows:

A relatively new phrase covering maritime activities at the less dangerous end of the spectrum of procedures which one country may use to influence the behavior of another. The full spectrum ranges from uninhibited military attack at one extreme to routine diplomatic persuasion at the other, and it has no discontinuities; diplomatic activities merge imperceptibly into threats and acts of war. Although in naval diplomacy, power is exploited rather than force expended, particular occasions may be thought to warrant acts of physical coercion. [Ref. 5:p. 209]

These definitions share the following stated or implied attributes: (1) the activity of naval forces is intended to influence behavior; (2) there is a broad spectrum of activity that qualifies as naval diplomacy; (3) the lower limit of that spectrum of activity is benign in nature; and (4) the upper limit of that spectrum falls short of the state of war, but *can include* violence. The difficulty lies in precisely describing the upper limit of this activity; i.e., at what point does an act of violence become an act of war? Can violence exist without war itself? And, if violence can exist without war, can this violent activity still be legitimately classified as diplomacy? The differences in the above definitions either hinge on these questions or they are trivial in comparison. A rigorous legal solution to this entanglement is beyond the scope of this thesis. The following is a modest attempt to provide order and definition to the upper bound of naval diplomacy.

The *International Relations Dictionary* [Ref. 6] provides a barely discernable path through this maze. Diplomacy is distinguished from the broader idea of foreign policy in the sense that, "diplomacy involves means and mechanisms . . . [including] the operational techniques whereby a state pursues its interests beyond its jurisdiction." [Ref. 6:p. 241] These operational techniques do not

exclude the force of arms. Often when an aggressor nation uses force of arms it produces a *fait accompli* and may in the process, from the victim's viewpoint, commit illegalities. The victim nation must either accept or react to the new situation [Ref. 6:p. 243]. Actions "short of war" that would normally involve military forces include: reprisals ("undertaking a normally illegal action to retaliate against a state that had perpetrated a wrong"), a blockade, and the occupation of foreign territory [Ref. 6:p. 191]. The *Dictionary's* entry under blockade (normally and act of war) provides the following clarification: "A pacific blockade, considered not an act of war but a reprisal for a legal wrong, may be levied by one state on another during peacetime to deny the latter's ships (but not those of other nations) access to the blockaded nation's ports." [Ref. 6:p. 194]

"Reprisal" is classified as a "coercive measure," and includes "shows of force" and pacific blockades as diplomatically legitimate measures undertaken by military forces. However, this definition concludes with this caveat: "Reprisals taking the form of military action against an offending state are no longer legally permissible under the peaceful-settlement and collective-security provisions of the U N Charter." [Ref. 6:p. 256]

Reprisals outside these latter limitations are not unknown in U.S. postwar history. During the 1962 Cuban Missile Crisis, the United States sought to forestall the "act of war" label by calling the blockade of Soviet merchant vessels en route Cuba a "quarantine." Also, U.S. acts of reprisal were carried out in the course of recent naval operations in the Persian Gulf, for instance, the destruction of Iranian oil platform surveillance posts and naval vessels after the USS *Samuel B. Roberts* struck an Iranian mine on 14 April 1988 [Ref. 7]. This latter event and

others illustrate Cable's thesis that the age of gunboat diplomacy is not past, but is thriving.

This tortuous path of definitions and examples shows that violence can exist without war and that violence can be considered part of diplomacy. Even so, the point at which an act of violence becomes an act of war is yet to be defined. Cable provides amplification on this point:

> . . . an act of war may either continue an existing war, be deliberately intended to start a war or liable to provoke the victim into starting one.
>
> An act of coercive diplomacy . . . is intended to obtain some specific advantage from another state and forfeits its diplomatic character if it either contemplates the infliction of injury unrelated to obtaining that advantage or results in the victim attempting the infliction of injury after the original objective has either been achieved or abandoned. Coercive diplomacy is thus an alternative to war and, if it leads to war, we must not only hold that it has failed: we may even doubt whether it ever deserved the name. [Ref. 3:p. 38]

Thus, the upper limit of naval diplomatic violence must not only be an act *not intended* to start a war, but also one calculated not to *incite* a military response. This threshold can vary greatly in magnitude, depending on the actors involved, locations, force levels, etc. It appears that such a threshold is situation-dependant. If so, a single all-encompassing measure, or set of measures can probably not be found.

A problem with Cable's preceding discourse is that if a victim nation is preparing a reprisal in response to a *fait accompli* and attempting to present its own *fait accompli*, it is semantically committing an act of war even though only an act of naval diplomacy is intended, in fact. Possibly, the phrase provided by Blechman and Kaplan is better suited: "without engaging in a continuing contest of violence." [Ref. 1:p. 12] The words "continuing contest" leave a lot of room for

conceptual interpretation perhaps, but practically speaking, no more than one or two cycles of tit-for-tat incidents of limited naval violence are meant.

Cooperative diplomacy is not recognized by Cable as he insists that the lower limit of gunboat diplomacy requires the *threat*, "however delicate and discreet, that naval force might actually be applied in support of specific diplomatic representations." [Ref. 3:p. 39] This demarcation illustrates, appropriately, the limitations of the *gunboat* diplomacy label within the larger context of *naval* diplomacy.

Edward N. Luttwak [Ref. 8] draws a distinction between the "latent" and "active" forms of naval diplomacy. The latent form refers to naval forces that may be coincidentally positioned to exert coercive influence. In the majority of cases, this influential positioning is wholly unplanned, and instead is *inferred* by the victim. As explained by Luttwak, accidental latent naval diplomacy can readily be converted to active forms. [Ref. 8:p. 11]

The discussion so far has identified various definitional viewpoints on the meaning of naval diplomacy. The majority shares these judgments: that naval diplomacy's intent is to influence; that there is a division of labor between cooperative and coercive forms of naval diplomacy; and that there are thresholds to both benign and violently destructive acts. The following composite definition is chosen as a succinct operational description of naval diplomacy for the purposes of this thesis:

> Naval diplomacy is the employment of naval power actively in the service of national interest with the intent to influence the thoughts and actions of foreign decision-makers. It can be practiced in the benign cooperative form and in coercive forms, when naval forces are used to threaten, or impose, violent sanctions, without engaging in a continuing contest of violence.

C. THE CONDUCT OF NAVAL DIPLOMACY

The foregoing definition has divided acts of naval diplomacy into two broad categories: cooperative and coercive. The purpose of this section is to operationalize these modes of conduct for purposes of recognition. This task is accomplished, as before, with samples from appropriate literature and examples.

Cooperative naval diplomacy is, as stated before, benign in nature. Its task is not to convey a threat, but to assist or gain favor. Examples include: naval hospital ships visiting Third World countries, diplomatic port visits, technical assistance for mine clearance after localized conflict, or local navy familiarization exercises.[1] Admittedly, port visits and familiarization exercises can have coercive overtones if they are intended for an external audience, but in cooperative diplomacy the emphasis is placed on the benefits enjoyed by the host and visitor. The providing navy often receives needed operational experience, and the recipient nation gains a service it is unable to provide for itself.

The literature on the *forms* of coercive diplomacy is very diverse. James Cable divides coercive diplomacy into four different forms.

- Definitive force: "the use of local force to create or remove a *fait accompli*." [Ref. 3:pp. 41, 83]
- Purposeful force: "In its purposeful application force does not itself do anything: it induces someone else to take a decision which would not otherwise have been taken: to do something or to stop doing it or to refrain from a contemplated course of action." [Ref. 3:pp. 57-8]
- Catalytic force: a show of force near trouble spots for contingency purposes. [Ref. 3:p. 67]

[1] See Dismukes and McConnell [Ref. 4:pp. 105-12]. This is a detailed description of Soviet mine-clearing efforts in the Bay of Bengal (1972) and the Straits of Gubal in the Red Sea (1974).

- Expressive force: "warships are employed to emphasize attitudes, to lend verisimilitude to otherwise unconvincing statements or to provide an outlet for emotion" in the furtherance of foreign policy objectives. [Ref. 3:p. 81]

Charles D. Allen in his work, *The Use of Navies in Peacetime* [Ref. 9], describes four ways in which navies can exert coercive force short of fighting a war:

- Intervention: landing ground forces from the sea (including amphibious assault)
- Interposition: isolating a target country from maritime access by another nation's interventionary force or by seaborne commerce, as in a blockade.
- Interdiction: drawing down by attrition, but not completely stopping, maritime access to a country.
- Protection of (SLOC) [Sea Lines of Communication]: protecting one's own access to a target country against interdiction or more generally sustaining one's commerce at sea, typically involving trade with another nation. [Ref. 9:p. 8]

The force composition required for protection of SLOCs should be considered an aggregate of that required for the previous three divisions. The force requirements for intervention are self-evident, however, the distinctions between the force requirements for "interposition" and for "interdiction" are subtle and require some clarification:

> Interposition tends to be employed more in the form of a signal or a threat to use force, than as an act of violence itself. Interdiction, on the other hand, gains most of its credibility by an actual attack. [Ref. 9:p. 10]

Allen enumerates these "interposition" force requirements:

- High visibility.
- Be strong enough to deter the opposition from resorting to force.
- It must remain in place/remain inviolate.
- It must possess considerable endurance. [Ref. 9:p.10]

Allen concedes fewer requirements for interdiction:

> On the other hand, requirements for interdiction [are] markedly less and in some cases might involve forces of as little visibility as possible. To be effective, interdiction needs only to inflict some losses on the enemy SLOC at irregular and unpredictable intervals to achieve the desired results, which might range from the requirement for unacceptably heavy enemy escort requirements to an increase in commercial insurance rates. Thus the force best suited to interdiction role, at least by a weaker nation, would be submarines, tactical aircraft, and light surface craft when the SLOC passes within striking range of their bases. [Ref. 9:pp. 10–11]

Direct comparison of Cable's and Allen's categories would be disingenuous. Cable's divisions are descriptive of the political limitations on limited naval force and of the political effects intended; Allen's division on the other hand is descriptive of the mechanics required to obtain Cable's effects. Said another way, Cable's terms are those of the *political strategist*, and Allen's those of the *naval professional*.

This discussion of the conduct of naval diplomacy is, again, not intended to be exhaustive, but rather to explore the diversity of perspectives on the subject. The two that have been included are sufficient to provide an effective framework for this thesis and the following discussion of the viability of submarines in naval diplomacy.

II. THE VIABILITY OF SUBMARINES IN NAVAL DIPLOMACY

A. INTRODUCTION

Military historian John Keegan concluded his history of naval warfare, *The Price of Admiralty* [Ref. 10], with the prediction that,

> The era of the submarine as the predominant weapon of power at sea must therefore be recognized as having begun. . . It is now also the ultimate capital ship, deploying the means to destroy any surface fleet that enters its zone of operations. . . In a future war the oceans might appear empty again, swept clear both of merchant traffic and of the navies which have sought so long to protect it against predators. Yet the oceans' emptiness will be illusory, for in their deeps new navies of submarine warships, great and small, will be exacting from each other the price of admiralty. [Ref. 10:pp. 274-5]

Even if it is granted that submarines are "the ultimate capital ship" in *wartime*, the question remains whether they are amenable to performing the kinds of duties that are commonly known as "naval diplomacy," and that have historically been performed by "impressive" *surface* combatants such as battleships and aircraft carriers. One suspects, that were an informal poll to be taken among naval professionals, diplomats, and others concerned with international affairs, the result would probably be skewed heavily toward the negative, even among submariners. One also suspects that one reason for this view is lack of a dialogue; with the majority opinion rejecting a role for submarines in naval diplomacy, the subject becomes closed, and "informed" opinion reduced to dogma that refuses to be challenged by changes in submarine warfare capabilities or the passage of events. The following is a collection of views on the viability of submarines in naval diplomacy.

B. VARIOUS VIEWPOINTS

1. Cable and Why Submarines, "Would Not Do"

James Cable's original 1971 view of the submarine as a tool of gunboat diplomacy is extremely negative. Submarines, he wrote, are "*inherently* ill-suited to the exercise of limited naval force." (emphasis added.) For one, he explained, coercive threats cannot be conveyed by a submarine unless it gives up the tactical advantage of invisibility and consequently renders itself vulnerable. Next, the lack of deck guns precludes the modern submarine from applying proportional force, so that attempts to threaten limited violence are either to likely fail or result in a shooting war. In other words, the submarine is said to be an all-or-nothing weapon. Cable goes on to suggest that during peacetime international crises, as the general tension level increases, naval commanders must deploy more assets to counter. the submarine threat. In peacetime the submarine threat is unconcerning, however, as political tensions increase, the violent threat of the submarine grows more credible. [Ref. 3:p. 152-3]

Stephen S. Roberts has commented on the Soviet use of submarines during the superpower confrontations at the height of the 1967 and 1973 Arab-Israeli wars. His conclusion is rather different from Cable's:

> . . . the submarine is in fact an important weapon of Soviet naval diplomacy. Much of the threat it poses depends, to be sure, on its ability to operate undetected. Views to the contrary notwithstanding, the submarine *can* in this instance communicate a threat without making its exact location known. For the U.S. Navy knows, and the Soviets know that it knows, that submarines are an integral component of ACW [anti-carrier warfare] task groups; hence the U.S. must presume that submarines are a part of any such groups confronting its carriers. When recognizable ACW task groups are formed Soviet submarines can and do heighten the apparent level of threat posed to U.S. naval forces. Moreover, . . . , the Soviets appear to reveal the presence of their submarines--including cruise-missile units--from time to time. Thus, the view that the submarine "is inherently ill-suited to the

exercise of limited naval force"[2] seems without foundation, at least as it applies to the Soviet Navy of today, when it is confronting the U.S. or another sophisticated navy. (emphasis in original) [Ref. 4:pp. 211-2]

Cable's response to Robert's observation came in the 1981 edition of *Gunboat Diplomacy*. He noted that he had predicted the character of the October 1973 submarine confrontation in fact. Had he not said that the credibility of the submarine threat is dependent on the general tension level? And had he not pointed out how submarines operating on the surface may be interpreted as signalling a reduced threat [Ref. 3:p. 265]? Nevertheless, Cable did concede a legitimate, albeit severely circumscribed naval diplomatic role for submarines:

> Even a scarcely credible Soviet threat may thus exercise two useful functions: it signals a political objection to American manoeuvres and it may actually handicap their execution. As such it qualifies as an expressive and possibly as a purposeful use of limited naval force, even if the action threatened would, if ever carried out, transcend the bounds of that concept by constituting an act of war. [Ref. 3:p.265.]

The Falklands conflict prompted a scattering of commentary on the coercive potential of the submarine. One author wrote:

> The deployment of a single nuclear-powered killer submarine to the area as well as a small garrison with surface-to-air missiles to hold Port Stanley airfield would most likely have *deterred* the [Argentine] aggression.[3] (emphasis added) [Ref. 11]

The deployment of the British submarines to the South Atlantic proved a reminder how it is "often the case that a sudden change in international political conditions requires the use of a military force for a purpose other than those originally intended." [Ref. 12]

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[2] Roberts is quoting the 1971 edition of *Gunboat Diplomacy*.

[3] In later discussion of the Falkland crisis, a miss-handling of a similar "expressive" act involving an nuclear attack submarine will be detailed

John Moore, at the time editor of *Jane's Fighting Ships*, similarly remarked how, "the presence of a force of nuclear submarines in the area, unseen and uncounted, was an important factor rarely commented upon." And, he observed: "The effect of the presence of nuclear submarines was as salutary as had been predicted, though this is as much a warning as a comfort." [Ref. 13] This comment poses an intriguing question, namely if the Falklands war has served to "prove" the coercive value of the submarine, does this mean that (a) nations will be more likely to resort to this weapon in future crisis, and (b) the "deterrent value" of the submarine in crisis short of active hostilities has increased?

When discussing how NATO might respond to a possible Soviet naval campaign against Norway in support of limited political-military goals, Cable backs away from ascribing a role for submarines:

> Submarines would not do. An invisible presence does not reassure civilians; a surfaced submarine does not deter professionals. Declaration can be considered provocative. Shore based aircraft resemble submarines. They are more effective in battle than in political confrontation. What is needed is an equally implicit, equally visible, matching response. [Ref. 14]

In a larger context the above statement could imply that *submerged* submarines by themselves are not effective at public assurance. It does imply that *submerged* submarines have deterrent value for the professional. The statement, "Declarations can be considered provocative," ignores that the presence of a Soviet naval force, apparently intent on invasion, can be just as provocative. Cable's statement begs the question--is the purpose of dispatching a naval force meant to "reassure civilians" or to send a message to the *potential aggressor*? Nuclear missiles in silos or submarines at sea are not visible to the civilian populace and may actually do little to assure them, yet no one denies that their very invisibility enhances the credibility of deterrence. Naval diplomatic

concepts have direct parallels with those of nuclear deterrence, yet somehow in Cable's view the instruments of deterrence must now be plainly visible to the public with little concern for the aggressor's perspective.

It is unclear what type of declaration Cable is referring to, but it could be inferred to suggest a blockade, enforced by submarines, as in the Falklands conflict. Cable's claims that an "invisible presence" does not "reassure civilians," but that a "declaration" of that presence is "provocative," appear inconsistent. Surface combatants by their presence would be just as provocative to the potential aggressor, yet would reassure civilians! The British populace, preconditioned by the success of Falklands submarine blockade, would be reassured by the, necessarily, provocative submarine presence announcement to a potential aggressor. Much attention shall be paid to this announcement of submarine presence, for this may be the crux of the solution to the "visibility" problem associated with submarine diplomacy.

Vice Admiral Sir Peter Stanford, Royal Navy, in a 1984 discussion of the relationship between deterrence and naval hardware and fleet structure, includes a provision for "presence:"

> Presence is a fundamental ingredient of deterrent capability. . . And, presence demands surface ships; submarines, however valuable as fighting machines, make little contribution to naval diplomacy. [Ref. 15]

While evidently rejecting the submarine's contribution to "presence," Stanford yet goes on to stress that an *operationally effective* presence requires that, "a capacity to surprise (perhaps, by submarine) need[s] to be brought to the notice of the potential enemies." [Ref. 15:p. 105] Although, Stanford does not elaborate on how a submarine's operational "capacity to surprise" should be demonstrated, he seemingly recognizes that the submarine can nevertheless contribute to fleet

functions short of open warfare. Again, the "visibility" problem appears to confuse the issue.

While discussing criteria for determining the appropriate level of force to be applied in instances of coercive naval diplomacy, Cable [Ref. 16] mentions the use of submarines in the Falklands crisis:

> The presence of the British nuclear submarines would probably not have kept the Argentine surface fleet in home waters if *Conqueror* had not sunk *General Belgrano*. A higher level of violence may, of course, seem positively attractive to a contestant enjoying a clear advantage in the ability to employ it, but this expedient is likely to carry penalties in the international environment. [Ref. 16:pp. 45-6]

The context of this statement fits well with Cable's point that each increase in the level of violence (of any type) is matched by a higher political price to be paid. This argument is certainly valid and requires later elaboration. But more important from the perspective of this paper, it also admits to a legitimate role for submarines in coercive naval diplomacy. Even so, Cable [Ref. 17] quickly reverts to the "traditional" view, arguing that submarines should be excluded from the application of limited naval force.

> Nor do I count the activities of submarines as gunboat diplomacy. A warship equipped only with nuclear missiles cannot use or threaten limited force.[4] Other submarines spend much time peering and prying around foreign naval bases. If this is just reconnaissance and training for a potential war, it is not gunboat diplomacy. [Ref. 17:p.38]

This comment highlights the limitations of Cable's definition of "gunboat diplomacy." Cable may be quite correct that, demonstrations of strategic nuclear force cannot be considered acts intended to "secure advantage,. . . in the furtherance of an inter-national dispute or else against foreign nationals. . . .,"

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[4] Cable has simplified his argument with the adjective phrase, "equipped only with nuclear missiles." This borders on propaganda and misrepresents the fact that all known SSBN classes are also armed with defensive torpedoes that may become offensive torpedoes after all missiles are fired.

and that therefore such demonstrations can not fall under the rubric of "gunboat diplomacy" (as defined by Cable) [Ref. 3:p. 39]. However, nuclear (or for that matter conventional as well) deterrence and "signalling" are aimed at goals broader than immediate "advantage," namely to influence the thoughts and actions of foreign decision makers. Cable's comment was directed at the unprecedented Soviet public announcement, in early 1984, that *DELTA*-class nuclear powered ballistic missile submarines (SSBNs), had been deployed (for the first known time) into the Mid-Atlantic as an "analogous response" to North Atlantic Treaty Organization (NATO) deployment of nuclear Pershing II and ground launched cruise missiles (GLCMs) [Ref. 18]. This incident is covered later in greater detail; suffice it to say that SSBNs can be and have been used to deliver political messages.[5]

Cable's "other submarines" in the vicinity of foreign naval bases refer to a series of incidents, dating back to the 1960s, in and about Swedish territorial waters. Aside from the "Whiskey on-the-Rocks" incident in 1981, the identity of the intruders has remained unverified, though the Soviets are highly suspected. These incidents are highlighted because of Sweden's neutrality; similar occurrences within the territorial waters of other, NATO, Scandinavian countries are less sensationalized, as though it is expected behavior. [Ref. 19]

Although strictly speaking these incidents have so far been non-violent (although the Swedes have used defensive violence), the fact is that the penetration of another nations territorial waters falls within the legal limits of an "act of war."[6] Also, Cable's proposition that training and reconnaissance are

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[5] It can even be argued that, given their *deterrence* task, SSBNs exist for no other reason than to signal political intent.

[6] The "right of innocent passage" [Ref. 6:p. 291] does not extend to the submerged submarine.

not part of his definition of gunboat diplomacy can be taken at face value; such acts, again, fall under the heading of deterrence. But it is ludicrous to suggest that, once detected by the victim nation, a sustained program (20 years) of "reconnaissance and training" is not intended to derive other benefits. Finally nuclear deterrence, reconnaissance, and training are only three of the many possible submarine missions that might have some usefulness in naval diplomacy. For Cable to limit the explanation of his rejection to only three missions is an incomplete argument.

As a concluding remark in his article, "The Future of Gunboat Diplomacy," Cable attempts prophecy: "In the future, gunboat diplomacy may assume different forms and be employed by different navies and against different victims." [Ref. 17:p. 41] Cable concludes that the forms of coercive naval diplomacy are not fixed, yet he will not admit any role for the submarine, though he has acknowledged some roles in the past.

In the 1986 assessment of the Royal Navy's ability to build, employ, and maintain an SSN force, British analyst Eric Grove [Ref. 20] made the following observation.

> Given the dependence of SSNs on an intelligence infra-structure that only a superpower can provide, Britain's SSNs are more or less adjuncts to the U.S. Navy, although they can be used to good effect on specific national interests when required--as the Argentines found out to their detriment. Even here, however, the political problems of using submarines in a politically sensitive situation makes them weapons relevant only in a high-level operation. [Ref. 20:p. 129]

This is essentially a rewording of Cable's warning of the increased political penalties associated with raising the level of violence. However, Grove introduces another factor that may have significance, namely intelligence. To be truthful, it is unclear what wartime or peacetime mission Grove envisages for the

British nuclear submarine fleet, but the professional would argue that there are many missions that do not require "superpower" intelligence. This does not deny the close working relationship that may exist between the Royal Navy and U.S. Navy's submarine forces. Nevertheless, the point is that Grove recognizes a role for submarines in the naval diplomacy role.

2. The U.S. Navy's Maritime Strategy and Submarine Crisis Control

In 1986 the U.S. Navy's Maritime Strategy [Ref. 21] was first publicly articulated. It is a conceptual framework that inspires critical thinking about how, the U.S. Navy may need to fight a global naval conflict with the Soviet Union. As such, the Maritime Strategy offers broad guidelines for force structure and training requirements, without anchoring U.S. and NATO operational commanders to any dogmatic strategic or tactical naval contingencies. The 1986 Maritime Strategy, as stated in the Department of the Navy's *Report to the Congress: Fiscal Years 90-91* [Ref. 22], has evolved into the "maritime component of the U.S. national military strategy" and has become:

> . . . a fundamental supporting element of the overall national military strategy, and as such represents a *concept* of operations for the effective global employment of maritime forces as a deterrent force or in the event of combat. [Ref. 22:p. 34]

The "maritime component" is divided into three phases: (1) deterrence or the transition to war, (2) seizing the initiative, and (3) carrying the fight to the enemy. The first phase is labeled a period (of undefinable duration) of "deterrence and crisis control." Force movements at this--non-violent--stage of the strategy would include the rapid forward deployment of anti-submarine warfare (ASW) forces, specifically maritime patrol aircraft (MPA) and nuclear powered attack submarines (SSNs). Their purpose would be to place U.S. naval

force in the most advantageous position in the event deterrence fails, *and to signal* the American intent to use force, if necessary. [Ref. 21:p. 9] Thus, the Maritime Strategy deliberately chooses the submarine as the one type of naval force that will not only fight an initial "forward defense" most efficiently, but that is also hoped to conduct Phase I *naval diplomacy* most credibly.

3. British and U.S. Navy Views on the Future of the Submarine as a Political Weapon

This scenario is not unique to a potential U.S.–Soviet conflict. For the Royal Navy's efforts in the Falklands Conflict, too, the SSNs were the first to arrive on the scene [Ref. 23].

A 1986 security breach allowed a Royal Navy planning document to become public. The so-called "Towpath Papers" (so-named after the location were they were found next to the Thames river) discussed threat assessments, fleet readiness, personnel, ship procurement issues, etc. But, it also cited concern in the area of submarine warfare. The Labour Party's defense spokesman in Parliament, David Owen, (himself a former Foreign Minister) paraphrased this concern.

> We may never again face limited war at sea with setpiece surface ship battles. Rather, in a period of *political tension*, an undeclared war of stealth could be played out under the sea. (emphasis added) [Ref. 24]

Accepting Owen's view, it appears that the naval diplomatic role for the submarine is now fully acknowledged by the Royal Navy.

Vice Admiral D. L. Cooper, U.S. Navy, Assistant Chief of Naval Operations (Undersea Warfare, OP-02) spoke about the "strategic" future of the submarine during his Congressional testimony in March 1989 [Ref. 25]. While relating the dynamic political and technical environment affecting the evolution

of the U.S. Maritime Strategy and the submarine force's contribution to it, Cooper remarked how, "*. . . the submarine force has assumed a consistently larger role and is now the dominant contributor to both strategic and tactical deterrence.*" (emphasis in original) [Ref. 25:p. 3] Discussing the inherent characteristics of the submarine, the Cooper used the term "leverage" during crisis situations, a term implying utility in coercive diplomacy and deterrence: "The submarine force," he claimed, "creates leverage out of proportion to its size because *an adversary does not know whether or in what number submarines are present.*" (emphasis in original) [Ref. 25:p. 4] Finally, Vice Admiral Cooper provides an interesting statistic: "The attack submarine force with ninety-eight SSNs represents over thirty-five percent of the Navy's combatant ships but uses less than ten percent of the Navy's budget." [Ref. 25:p. 5] Clearly, the U.S. submarine force is preparing itself for use in crisis situations short of war. A question remains: are preparations being made for submarine involvement in crisis situations involving opposition other than the Soviet Union? If so, at what level?

Admiral Carlisle A. H. Trost, U.S. Navy, Chief of Naval Operations (CNO), during congressional testimony in June 1989, responded to a proposal to substitute cruise missile carrying submarines for forward deployed carrier battle groups as a primary deterrent. General Brent Scowcroft had articulated this proposal prior to becoming President Bush's National Security Advisor. Admiral Trost's response:

> He [Scowcroft] put forth, for example, that submarines with cruise missiles would be adequate replacements for battle groups. I doubt that that view would be shared by any prospective enemy or anyone in a crisis situation who wanted to take on the United States Navy. Submarines with missiles are highly capable, but they are out of sight. They are not a conventional crisis situation deterrent, in that you cannot start shooting cruise missiles over land as a deterrent to anyone's aggressive intentions or to terrorism. [Ref. 26]

These remarks were consistent with Trost's earlier prepared posture statement in which he told the U.S. Congress:

> I want to emphasize that it is the extensive capability and adaptability of our embarked carrier air wings, unique in the world, that makes the large deck carrier the preferred weapon system whenever our national interests are at risk. [Ref. 22:p. 26]

> In the final analysis, our Carrier Battle Groups are the nation's force of choice in peace and war. There is simply no substitute for their capabilities. When all is said and done, Carrier Battle Groups are the most cost effective and combat capable system in the U.S. inventory, and will remain the cornerstone of U.S. naval capability. [Ref. 22:p. 37]

Admiral Trost has not slighted the submarine force with these statements. His message instead was that, overall, the best naval force to meet the entire spectrum of contingencies the Navy must face remains the balanced Carrier Battle Group (CBG). One must assume that included in each CBG is at least one SSN, although, Trost did not explicitly say so. Nevertheless, the CNO seems to suggest that Third World crisis contingencies are the monopoly of the carrier air wings. This should not imply that the CBG is the only force instrument capable of "managing" a Third World crisis.

William H. J. Manthorpe, Jr., holds the position that the U.S. is very cognizant of the need and execution of "perception management" with submarines with regard to the Soviet Union. However, he feels that with respect to the Third World nations, the Navy poorly plans for submarine perception management contingencies [Ref. 27]. In view, of the Navy's operational bias toward the CBG, it is entirely possible that no planning exists for Third World submarine perception management. If this is true, it suggests a prevailing attitude that as long as CBGs are available, there should be no need for submarines in the Third World coercive diplomacy role.

C. CONCLUSION

Views on the value of submarines in naval diplomacy fall into two broad categories: first there are those who claim that submarines are intrinsically unsuitable for naval force short of war. Their argument is categorical: submarines are invisible, non-proportional, and uncontrollable. Next, there are those who acknowledge a perhaps limited naval diplomatic role for submarines--at least in the superpower context, but are unwilling or unable to expand this general concession and suggest practical policy applications. The following chapters review the "menu" of arguments for and against the submarine diplomatic role.

III. THE CASE AGAINST SUBMARINE DIPLOMACY

A. INTRODUCTION

This chapter summarizes and examines the various arguments against the use of submarines in naval diplomacy. Because skepticism is widespread, though often not articulated, arguments against the coercive use of submarines can be identified much more readily than arguments in favor. Before submarine diplomacy can ever to be considered a potentially legitimate naval preoccupation, it is important to first take stock of the various constraints that are claimed to militate against such a development.

B. SUBMARINE LIABILITIES

1. Lack of Overt Threat

Submarine stealth or covertness is a great tactical strength, but it renders the submarine invisible and, arguably, unusable for naval diplomacy. Cable maintains that limited naval force must necessarily remain overt, and he contends:

> A submarine cannot communicate a threat without making its presence known. Indeed, unless the victim [of gunboat diplomacy] is a fairly sophisticated and consequently dangerous, warship, the submarine will actually have to surface, when it ceases to be a superior ship and becomes acutely vulnerable to almost any warship. [Ref. 3:p. 152]

The first axiom of submarine warfare is to remain undetected [Ref. 28]. Being detected by the foe before placing a weapon in the water is analogous to an unmarked police car on stakeout inadvertently energizing its siren: entirely unprofessional. Remaining undetected is the major reason for the submarine's

tactical advantage. If the location of the submarine is known exactly, it cannot maintain its tactical advantage, and without tactical advantage the submarine cannot perform its mission effectively. Yet, if its presence is not known, how can it perform the gunboat diplomacy deterrence mission? The submarine must somehow be made "visible;" this may require sacrificing some tactical advantage in return for "strategic/diplomatic" gain. Later discussion will address a possible solution.

2. Non-proportionality of Submarine Weapons

After World War II, deck guns were removed from submarines, and its proportional warfare capability was traded for improved submerged mobility. Additional efforts to improve submerged speeds resulted in streamlined hull forms with low freeboard, but poor surface seakeeping characteristics that created extremely hazardous conditions for personnel topside and precluded the return of the deck gun. The deck gun provided only limited capability in the anticipated superpower warfare environment, and in today's warfare environment it would be a waste of precious space and weight.

Present armaments of U.S. attack submarines are designed to inflict maximum possible damage against surface ships and submarines. This is not to say that only one torpedo or one missile is required to sink every target, but that it is possible for any single weapon fired to sink any appropriate target. This is not always the desired effect in naval diplomacy, and this could lead to the inadvertent outbreak of war, if sinking the target is unintended. With the loss of the deck gun the submarine can no longer fire a demonstrative shot-across-the-bow and has thus lost the capability for proportional violence.

3. Low Weapon Utility Against Certain Targets

Current submarine weapons, i.e. torpedoes and cruise missiles, are designed for targets of appreciable draft or radar cross section. Not all surface targets that are likely to be encountered in the naval diplomacy environment fit this requirement. During the Iran–Iraq War in the Persian Gulf, U.S. Navy combatants exchanged fire numerous times with opposing naval forces that sallied forth in converted outboard motor pleasure craft (Boghammers). This is an example of entirely inappropriate targets for submarine weapons. Additionally, U.S. submarines possess no ability to attack hostile aircraft.

4. Communication Requirements Create Detection Risk

Submarine communications in the receive–only mode are highly reliable. The reliability of submarine transmissions is equally high. However, transmission is fundamentally different from reception in that it leaves a clue to its whereabouts. Accordingly, the greater the number of transmissions the submarine makes, the greater risk of detection. The large volume of communications that is normal to a crisis situation would sacrifice stealth and place the mission and the submarine at risk.

5. Submarine Threat May Lack Credibility

The normal lack of overtness and non–proportionality of a submarine's weapons has created a "credibility" problem for the submarine. The hypothetical skipper of a blockade–running merchant vessel does not possess the capability to detect the submarine. He may be told of the submarine presence or he may have even sighted the submarine, but he *is likely to expect* that he will only be fired upon if the submarine intends to start a war. Cable explains:

> Nor is the silent menace presented by a flotilla of submerged submarines to a surface fleet which has detected their presence likely to cow a resolute

> victim [the surface fleet], who will calculate that, irrespective of the outcome of the local naval battle, the submarine will only take action if war is intended. [Ref. 3:p.152]

And he continues:

> The six Soviet submarines that entered the Caribbean during the Cuban missile crisis would have been the least of American worries even if their numbers had been ten times greater. [Ref. 3:pp. 152-3]

With the ubiquitous, unannounced, nonproportional submarine perceived only as a weapon of war, it will lack credibility as a weapon of naval diplomacy.

C. A SECOND LOOK AT SUBMARINE LIABILITIES

As a counter to the lack of overtness argument, it can be argued that the SSN is a sufficiently capable platform so that, should it purposely disclose its presence in a controlled, random manner, the tactical advantage may, in most cases, be rapidly recovered. Disclosing submarine presence could be performed by broaching (allowing the submarine's superstructure to break the ocean surface), shooting flares in the vicinity of adversaries, or the limited random use of active sonar in the case of warships. Doing so would be far safer and easier, of course, in the absence of anti-submarine warfare (ASW) capable surface ships and aircraft. It would still be possible with these opposing assets present, but it would be much more difficult, time-consuming, and foolhardy. The preferred method of maintaining SSN overtness might be for the National Command Authority (NCA) to

announce an SSN "Presence and Intent Notice" (SPIN).[7] This could be done discretely through diplomatic channels or if public attention is desirable, via the media. In this manner the SSN gains diplomatic practicality, remains undetected, and retains the tactical advantage. Something similar was practiced effectively by the British during the Falkland campaign, although it was not recognized by many until *after* the sinking of *General Belgrano* sinking [Ref. 29].

Since the presence of a submarine in a large geographic area is made known by the SPIN, the risk of detection, due to high volume communications, is reduced to a level roughly proportionate to the detectability range (radar or visual) of the submarine's antenna. But, considering the near-constant communication requirements of past experiences in naval diplomacy, the rate of antenna exposure could easily exceed that dictated by prudent submarine practice. The best remedy is to provide the commanding officer with clear, concise, and appropriate prior orders and preplanned guidelines, and for the Controlling Authority[8] to resist the

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[7] A SPIN notice might be worded as follows. "In view of the international situation, at the request of Republic of Contested Island's Government, the United States has established a 200nm maritime warning zone surrounding the Republic of Contested Islands. This warning zone is enforced by U.S. attack submarines with instructions to interdict aggressor nation maritime traffic. If the warning zone is violated by hostile aggressor nation military traffic, the submarines are authorized to shoot first and ask questions later." Attached to this SPIN would be a complete copy of the rules of engagement, if deemed appropriate.

[8] The Reagan administration's philosophy was to delegate control of operational forces to the lowest level possible, the theater Commander in Chiefs (CINCs), while providing them with clear NCA intent and appropriate rules of engagement. One would think the Bush administration will follow suit. However, the Ford and Carter administrations were characterized by operational, even tactical, control being retained at the highest levels. The later style requires constant communications if flexibility and the perception of control are to be maintained.

Presently the CINCs have operational control over all theater assets including the SSNs, as well as total flexibility over the whole spectrum of the diplomatic role played by those assets. For the purposes of this thesis further references to the NCA are meant to include the CINCs acting as operational controlling authorities for the SSNs.

temptation to expect or demand a real-time, play-by-play, narrative from the scene.

The preceding discussion tacitly *accepts the requirement for visibility* in naval diplomacy platforms and tries to establish submarine visibility within that paradigm. *However, there are cases where benefits are derived from non-visibility.* Edward Luttwak, describing words in naval diplomacy with possibly misleading connotations, suggested "presence" as having:

> ... an unfortunate connotation in that it implies physical visibility where none may exist. More important, it suggests passivity where none may be intended--or perceived. One typical erroneous deduction is that submarines are inherently unsuitable for "presence" missions. [Ref. 8:p. 2]

The strategic deterrent SSBN draws great credibility from its invisibility, which provides survivability. Nuclear *Tomahawk* land attack cruise missiles are assigned a deterrent mission in the nation's nuclear reserve. These weapons are co-located with conventional weapons on naval platforms--some visible, some invisible. The stealth fighter remains shrouded in secrecy despite official announcement of its existence. All of these systems make contributions to different levels of deterrence--a form of coercive diplomacy, yet are invisible.

The SSN can proceed to the area of political tension undetected, thus not appearing provocative until a time of the government's choosing. Similarly, should a crisis be resolved while the submarine was en route or prior to its presence becoming known, it can be withdrawn without political penalty. A strong "visible" NATO response to a hypothetical Soviet naval force threatening the invasion of Norway might provoke violent Soviet action to prevent a political/military loss of face. However, by informing the Soviets through diplomatic channels of a strong submarine response without public announcement, the Soviets will be able to withdraw without a loss of face. This scenario and the preceding examples are

provided to challenge the continued suitability of a categorical visibility requirement in naval diplomacy platforms.

The non-proportionality of submarine weapons is fading in view of the larger context of naval warfare in the age of high technology anti-ship missiles (ASMs). Thin-skinned surface combatants can no longer allow hostile aircraft or missile launching surface combatants to approach to within weapons range, much less defensive gun range (the gun being the epitome of the proportional naval weapon) without hazarding themselves. The rules of engagement (ROE) debates and revisions have recognized this fact and are being changed to allow the surface combatant commanding officer to protect his ship with non-proportional weapons and actions. The question may arise whether, since the submarine will be much less exposed to this kind of threat, a non-proportional response is justified. The answer must be found in the SPIN. The SSN will be allowed nonproportional action when carrying out the NCA intent, or when protecting itself, other combatants or neutrals within the rules of engagement. A discussion of the proportional weapon debate is contained in a later chapter on the future of submarine diplomacy.

In choosing the Cuban missile crisis as an example of the lack of credibility of submarine in naval diplomacy, Cable applied a specialized circumstance to the general field. In this instance a local battle did not exist. Cable's point is that a local battle would perhaps have triggered total nuclear war regardless of the participation of submarines. Perhaps this is true of this particular incident or of *superpower* confrontations in gunboat diplomacy in general and certainly it may have some implications about segments of the maritime strategy, but this limited condemnation of submarine credibility should not be extended to every possible circumstance in which submarines could be involved in naval diplomacy.

In the context of a Third World "local battle" it can be asked how the "limited naval force" contributed by the submarine would incite war, whereas the "local [surface or air] battle" would not. During the 1986 U.S.-Libya "Line of Death" confrontations in the Gulf of Sidra, would war have resulted from the torpedoing of a declared "hostile" Libyan patrol boat or submarine by a U.S. SSN? Two Libyan patrol boats were destroyed by missiles and bombs from aircraft [Ref. 30]. What difference does it make in gunboat diplomacy if a nonproportional response is required and the missile is launched from an aircraft or submarine? The answer: NONE! This is especially so if the submarine's presence had been announced, or the submarine had been in company with visible naval assets, or both. The same holds for the U.S. retaliation for the mining of the USS *Samuel B. Roberts*. Operation Praying Mantis in April 1988, resulted in the sinking of an Iranian frigate and patrol boat and the severe damage of another frigate by U.S. aircraft [Ref. 31] and surface combatants [Ref. 7:pp. 69-70].

The SPIN concept can only partially overcome the credibility problem of the submarine as a naval diplomatic deterrent. Credibility is a function of intent and resolve to use one's military capability, and of the opposition's conviction that intent and capability do exist in *fact*. If a weapons system capability exists, but its use is so restricted that it may never be used (especially when opportunities are presented), that capability will not easily engender credibility. Unfortunately, credibility can sometimes only be established *post facto*. Argentina perhaps had some doubts about the capability of British SSNs and the resolve of the British to use them. But, after the sinking of the *General Belgrano*, the credibility of the Royal Navy's submarine threat was ensured.

Low submarine weapon utility against close inshore, small, and shallow draft targets is a legitimate weakness. Technology is improving submarine weapons capability, but the result will rarely be as cost effective as that of the aircraft's bomb or the surface ship's naval gun. As the commanding officer of one submarine has stated:

> It has been said that there are only two kinds of ships in any navy--submarines and targets. But this submariner would be the first to agree that there are many things that "targets"--not to mention aircraft--have always done better than any submarine. [Ref. 32]

IV. THE CASE FOR SUBMARINE DIPLOMACY

A. INTRODUCTION

Vice-Admiral Bruce DeMars, U.S. Navy, at the time Deputy Chief of Naval Operations for Submarines (OP-02), has spelled out the requirements for an "offensively oriented forward-deployable submarine" [Ref. 33] as follows:

- STEALTH
- MOBILITY
- FIREPOWER
- ENDURANCE
- SURVIVABILITY
- EFFECTIVENESS

The following is a review of these attributes with emphasis on their potential contribution to a role for submarines in naval diplomacy.

B. SUBMARINE ADVANTAGES

1. Stealth

"Remain undetected"--this order is given with confidence to only two types of naval forces: the submarine force and hit-and-run amphibious landing parties. For these forces this order is *standard* operating procedure, meaning that only when infrequently *not* in effect is stipulation required.

The stealth of the submarine provides the NCA with inherent platform flexibility. The SSN can be dispatched to a problem area early without influencing delicate diplomatic negotiations or raising tensions by provocation. If the

situation calms without intervention, the SSN can be withdrawn just as stealthily [Ref. 29]. The stealth factor also provides a great uncertainty to the opposing forces. Were SSNs in the area before or after the NCA announcement? There may have been a SPIN declaration, but perhaps not. If not, the party to be deterred must consider the possible presence of one or more submarines, either independently or in support of a surface task grouping. In all cases, a high degree of uncertainty is introduced into opposition calculations. Stealth is a significant contributor to the psychological aspects of submarine warfare.

Stealthy platform flexibility allows the NCA a wide range of options. The "sinister" combination of the submarine-commando team was recognized by Cable as one way that submarines might serve as an instrument of gunboat diplomacy after all:

> Even the submarine might come into its own for specialized operations--landing a small party inperceived [sic] by night to kidnap or rescue a leader. . . .[Ref. 3:p. 94]

Another example is the British use of SSNs for intelligence-gathering purposes after the Argentine Navy had retreated into port [Ref. 23:p. 126]. The British SSNs were able to detect sorties of the Argentine Air Force at take-off and provide tactical warning to the Task Force vessels and landing-zones 400 nautical miles to the east. Submarines simply provide a means of performing several conventional tasks of naval diplomacy surreptitiously.

2. Mobility

Nuclear power has tremendously improved strategic mobility of certain naval forces. This is equally true for the nuclear-powered aircraft carrier as it is for the submarine. But the nuclear endurance of surface combatants is offset by the need for replenishment of various consumables. SSNs, on the other hand,

can deliver "impressive, sustained high speed," and "freedom from the impact of weather and sea conditions," which affect all surface ships [Ref. 29]. As the Falkland crisis demonstrated, it is entirely possible that the SSN will be the first unit to arrive on the scene; and, as previously discussed, the U.S. Navy's Maritime Strategy requires this.

Tactically, the combination of the SSN's high submerged mobility and stealth allows repositioning for detection-avoidance and repeated optimum attacks. The HMS *Conqueror's* successful use of low-tech World War II torpedoes was afforded by the mobility-stealth combination [Ref. 29:p. 38].

3. Firepower

The submariner's first thought about weapons employment against a target is the number required for a kill. The number of torpedoes or missiles is usually quite low (on the order of one or two) and is testimony to the lethality of the weapons. The conventional weapons mix presently available to U.S. attack submarines includes: the *Mark 48* torpedo (anti-ship and anti-submarine), *Harpoon* missile (anti-ship), *Tomahawk* cruise missile (anti-ship and land attack variants), a variety of naval mines, and various commando units. But, as already discussed, these weapons, with the exception of raiding parties, can be criticized for their lack of proportionality.

The *Tomahawk* sea launched cruise missile (SLCM) launched from submarines has done as much to change the war fighting implications of submarines as did nuclear power 30 years ago. The land attack variant in particular has provided submarines with the *conventional* means to project power far ashore. This power projection capability, be it overt (surface ships) or covert (submarines) can be a powerful deterrent. The SLCM has excited even non-

submariners in the Navy, with some going as far as to characterize SLCM-capable SSNs as the future aircraft carrier:

> SSNs can launch *Tomahawks* at an enemy's homeland targets virtually at will. Two or more SSNs can concentrate this kind of force. A submarine's *Tomahawks* can neutralize air defenses for follow on carrier air attacks. Submarine launched *Tomahawks* can create a diversion far from the main point of attack. [Ref. 34]

Used sparingly and against clearly defined targets, can the SLCM be a proportional weapon of gunboat diplomacy? The answer must be affirmative on the same grounds that Cable considered the U.S. bombing of Libyan targets during March and April 1986 as a legitimate act of gunboat diplomacy [Ref. 17:p. 40].

4. Endurance

The SSN's limited need for replenishment and hence high on-station endurance adds to the submarine's potential value as a naval diplomatic tool. An on-station SSN need not retire to a rear area to periodically refuel and to thereby weaken the patrolling force. On-station time is maximized and relief can be accomplished surreptitiously by another SSN. At no time can the opposition estimate the amount of endurance remaining for the on-station SSN. This complicates potential opposition planning, as there are no evolutions to observe, and no discernable schedule or logistics weaknesses to exploit.

5. Survivability

The basis of submarine survivability is the medium in which it operates. Submarine survivability offers exploitable advantages:

> The water medium provides the greatest protection and concealment. It has the least ranges for detection. It offers the greatest shielding of radiations. And it causes the greatest span of time for tactical actions. In today's environment of electronics, very high speed systems, and precision weaponry of great damaging power, the need for covert operations and surprise in attack become paramount, and submarines offer a high degree of both. [Ref. 35]

Unlike surface combatants, the submarine requires no defenses against anti-ship missiles other than to remain submerged [Ref. 36]. Thus, the SSN can perform a significant number of naval diplomacy roles without subjection to the ASM threat that has become a growing concern for surface ships, merchant and combatant alike.

6. Effectiveness

Much has been said about the effectiveness of the SSN in the ASW role. This fact is underscored by its role in the U.S. Navy's Maritime Strategy. The effectiveness of the SSN in gunboat diplomacy is a lesser known quantity. Elsewhere in this paper, case studies of the use of submarines in naval diplomacy will illuminate this aspect, but it must be conceded that, given the absence of major institutional supporters, the "evidence" has little chance to be judged on its own merits. Phenomena that cannot be fully explained by an established paradigm are rarely recognized, by the paradigm's advocates, or are dismissed as "anomalies," i.e. exceptions-to-the-rule [Ref. 37]. This means that the effectiveness of submarine diplomacy can only be fairly judged against the criteria of a *different* naval diplomacy paradigm, i.e. one that recognizes at least the *principle* of submerged naval diplomacy.

C. DISCUSSION

An important distinction must be clarified before proceeding. Surface combatants are recognized as the tools *par excellence* for naval diplomacy because they are "credible platforms." They are credible because they have been used in the past. If warships had never fired a shot, short of war, it would not matter that they are visible--they would not be credible for diplomacy purposes. The victim

would look to sea in the diplomatic situation and see only grey ships, and he would not worry. This would parallel the position of the submarine prior to the 1982 Falklands conflict. Until that time submarines were perceived as weapons useful only in war. Uninformed opinion still views submarines in this manner. A detailed discussion of the Falkland crisis follows in a later chapter, but it warrants mention that British submarine activities bore no resemblance to open warfare. Yet, the threat from the unseen submarine became suddenly credible after the sinking of the Argentine cruiser *General Belgrano*.

The point is that demonstrated capability and the political will to use limited naval force must exist before that force can become a credible threat. For this reason much of this thesis centers on violent acts that have the possibility of "provoking the victim into starting' a war [Ref. 3:p. 38]. The demonstrated capability to conduct violent operations, within naval diplomatic limits, must precede acceptance of the submarine as a coercive capability below the threshold of "war-fighting" violence. If submarine diplomacy obtains credibility, the party to be deterred will look toward an apparently empty sea and worry about submarines in situations short of war. Without credibility, an empty sea causes no worry.

In the past, acknowledgement that submarines have (or may have) been participants in U.S. naval "presence" operations, has usually come long after the fact. Such admissions have commonly come to light during Congressional testimony, and were rarely aimed at improving the credibility of U.S. naval diplomacy. Instead, they have usually been cited in passing and in support of naval force structure and funding debates. If an intended side benefit of these releases of information is to improve the credibility of a U.S. coercive naval

presence by suggesting that submarines are always present in such naval formations, it lacks appropriate timing and volume--it is a poor method of communication, for the signal has been too weak to be heard except by the strongest receivers. The latter are, of course, very important, but others may miss this weak signal completely. In naval diplomacy, communication must be simple and clear to be effective.

The open literature on naval diplomacy commonly discusses the various types of forces involved, but rarely are submarines mentioned. This could be for two reasons. The first is that submarines have simply not been involved on a wide scale. This would imply that there is a general sense that submarines are somehow unsuited for such missions. This thesis argues that there is no such international consensus. A consensus implies communication or a tacit understanding. It is extremely doubtful that there is international dialogue on this subject, however, a *tacit* understanding could become institutionalized in practice.

The second reason could be that the participation of submarines in naval diplomacy is a more prevalent occurrence than is reported in fact. In this case, *military* considerations (possibly reserving a diplomatic or war-fighting submarine capability for when it is seriously needed) have perhaps outweighed calculations of short-term *diplomatic* value. Or, it could simply be that submarine involvement has been solely restricted to defense of the surface combatants involved, and not intended for any coercive diplomatic value whatsoever. This latter view is plausible if it is judged that the (defensive) deterrent value of the escorting SSN requires no explicit advertisement. In effect, the assumption is that the opposition assumes that SSNs are defending a "show-of-force" battle group.

These reasons complement each other nicely. If, in fact, submarines have been routinely involved in naval diplomacy, their nature makes denial easily plausible. Thus, the security factor of the second reason builds on the perceived consensus implied by the first. If there were a "conspiracy" to deny the true value of submarines in naval diplomacy so as to capitalize on the shock value of their eventual use (or any other potential benefit), the framing assumptions could not be any better. This is not an attempt to construct a case of conspiracy; however, it does suggest that any ulterior motives (bureaucratic, organizational, or strategic) could be easily masked.

An example of this phenomena was suggested to the author by Bradford Dismukes [Ref. 38]. He revealed that the ground rules for unclassified publication of his book (co-edited with McConnell), *Soviet Naval Diplomacy*, included a stipulation that no mention of Soviet submarines was allowed other than those observed operating on the surface or conducting port visits. Thus, for "security reasons" most armchair analysts have been kept in the dark as to the operational clues of Soviet submarine behavior that may have been available to task force commanders and the NCA. This is not a fault in itself, for security concerns are certainly legitimate. The problem lies when these "uncleared" or uninformed armchair analysts postulate and publish that the submarine diplomatic/deterrent contribution is essentially meaningless because submarines are not "visible" to them and therefore lack diplomatic credibility.

Admiral Mckee's first axiom of submarine warfare is: Remain undetected [Ref. 28:p. 11]. These two words form the basis of the submarine force organizational essence. The inculcation of this axiom is very deep. It is imbedded in the submariner's professional training from moment he is first submerged. The

suggestion of intentionally informing a potentially hostile naval force of the location of a submarine is taboo. This is a professional dictum of the highest order for today's naval leadership and is a "rule" that will be slow to change. To the submariner, the Submarine Presence and Intent Notice (SPIN) is an utterly ridiculous (and scary) suggestion.

If submarines are to engage in naval diplomacy, their presence must, somehow, be let known to the intended audience. The SPIN meets this requirement, but some would say that it places the submarine at unnecessary risk. A compromise can be found; the trade-off between submarine tactical advantage and coercive diplomatic utility can be bounded.

The submariner takes professional pride in his ability to avoid detection. The suggestion that a submarine placed in the area with a radius of, say, 200 nautical miles (nm.), could not avoid detection, would irritate the professional submariner. He would quickly point out that the area covered by such a circle would encompass over 125,000 nm. square, and that localization by even the largest and best ASW force, would be a formidable, though not an insurmountable task. But what about a 100 nm. radius equating to an area of over 31,000 nm. square? While it is recognized that this argument is extremely simplistic, the point to be made nevertheless is that "it all depends"--depending on such factors as location, the potential opponent's counter-capabilities, and most important, the diplomatic stake involved. A compromise between the demands of diplomatic "visibility" an tactical security can probably be found.

Another widely held institutional bias is that the submarine is a "capital" ship, designed, optimized, and reserved for general war. This view is bolstered by the further argument that the U.S. Navy submarine force level is barely adequate

to carry out assigned wartime missions, let alone take on the added responsibility of crisis diplomacy. Moreover, the SSN has a qualitative advantage over the surface ship in the performance of ASW, while a cursory glance at SSNs suggests unsuitability in naval diplomacy. With these two "givens," a corollary to the "capital" ship argument emerges: naval diplomacy roles should only be performed by surface combatants and the carrier air wings. These arguments do not take into account that the changing warfare environment may be placing the surface ship at unnecessary risk , or the consideration that roughly thirty five percent of U.S. combatants are SSNs [Ref. 25:p. 5], or that possibly there could be too few surface combatants to fill every naval diplomacy role along with other commitments.

The threat environment of naval diplomacy has changed drastically from 15 or even 10 years ago. The Falklands Conflict, the Gulf of Sidra "Line of Death," Operation Praying Mantis, the *Stark* Incident [Ref. 39] and the *Vincennes* Incident [Ref. 40] all indicate that the low-intensity conflict at sea will have mid-intensity overtones. Surface forces will continue as the main component of naval diplomacy and inevitably, tragedies like the *Stark* and *Vincennes* incidents will also continue. Surface forces in naval diplomacy must react faster, less proportionally, and sometimes prematurely in the face of the ASM equipped Third World naval forces. This must be so for self protection. Can the potential gains of modern naval diplomacy balance with the increased risk posed to contemporary surface forces? Can the potential uncertainties of self protection balance with naval diplomacy's gains? Currently, these balances are unstable, and shifts are inevitable. Third World navies are growing with respect to anti-ship missile and submarine capability [Ref. 41]. "Some twenty-one Third World countries collectively possess more than 250 submarines . . . In selected missions, such as

regional straits defense or SLOC interdiction, such forces could prove militarily significant even against a more capable naval power." [Ref. 42] What is the best naval asset to counter the Third World submarine? Perhaps, the submarine is being "forced" into naval diplomacy, despite its shortcomings.

D. CONCLUSION

Submarines in naval diplomacy have their limitations. The opponent must have some assets that submarines can hold at risk: a merchant fleet, naval combatants, or appropriate *Tomahawk* targets. If the political objective can be more easily accomplished with aircraft or surface combatants, then submarines are, obviously, not the preferred choice of the NCA. But if surface combatants or aircraft are placed at unacceptable risk, or if surface combatants or the aircraft carrier cannot arrive before a deterrent presence or a violent response is required, a submarine may be required to fill the coercive naval diplomacy role. One hopes, that before this situation arrives the coercive threat of the submarine is credible, lest expediency require violence to establish credibility.

The use of violent force to establish credibility need only be a demonstration, thus the remaining assets are held hostage to the coercive presence. Examples of such demonstrations would be: sinking one ship to demonstrate and threaten that all the opponents ship's can be sunk, or the use of a submarine launched SLCM to destroy a discrete land target to demonstrate and threaten that all such targets can be destroyed. The submarine and land-attack SLCM provide a covert platform that is possibly more proportional than a carrier air strike. Once credibility is established the submarine can make a contribution to the limited naval force of coercive diplomacy by its presence--at levels below

violence. The biggest limitation, by far, is the "visibility" problem. Once the "visibility" problem is resolved to the satisfaction of the parties involved, most opposition to a role for submarines in naval diplomacy will be muted, despite the submarine's limitations.

The Submarine Presence and Intent Notice (SPIN) is only one means of providing that visibility. Other methods compromise the integrity of submarine tactical advantage, *perhaps dangerously*. The following chapter consists of a series of case studies involving the use of submarines in apparent naval-diplomatic circumstances. The questions of interest raised by theses cases are the following:

- Why were submarines used?
- How was the submarine presence conveyed, if applicable?
- How was submarine force used?
- What were the ramifications and outcome of submarine use?

If these questions can be answered, perhaps a greater understanding of past submarine diplomacy can be applied to its future use.

V. CASE STUDIES OF THE USE OF SUBMARINES IN NAVAL DIPLOMACY

A. INTRODUCTION

The following case studies are provided to support the proposition that submarines have participated in naval diplomacy on more numerous occasions than the literature frequently implies. The case studies presented include: the Spanish Civil War, the Cuban Missile Crisis, the June 1967 and October 1973 Arab–Israeli Wars, the 1970 Jordanian Crisis, the 1971 Indo–Pakistani Crisis, and the 1982 Falklands Conflict. This effort is by no means a complete compilation, nor are all the facts known in the cases presented. However, enough is known to suggest that submarines have enjoyed some success in the naval diplomatic arena. The case study method is a less rigorous methodology than others; however, it is not intended to prove that submarines are a useful naval diplomacy platform. Case studies allow presentation of pertinent information to support arguments and positions. This implies, of course, that it is possible to construct a case study to support any argument or position. An example of misconstruction is found in what is perhaps the earliest incident of submarine diplomacy.[9] James Cable cited this first case of submarine diplomacy as follows.

> On 20 October [1927] the British Submarine L4 sank a Chinese pirate ship in Chinese territorial waters. In the subsequent protest the Chinese Government complained, *inter alia*, that excessive force had been used and that some of the victims of the Pirates had perished together with the latter. This illustrates the relative clumsiness of the submarine as an instrument of naval diplomacy. [Ref. 3:p. 204]

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[9] This, of course, excludes the latent political ramifications of German and Austria–Hungarian unrestricted submarine warfare activities which, arguably, were a contributing cause of U.S. entry into World War I.

It is unfortunate that this passage misrepresents the truth. Cable's research source for this information, *The China Yearbook 1929-30*, reveals that the *L4* was operating on the surface and sank the S.S. *Irene* by firing "five or six solid shots and explosive shells into her [with the deck gun] at approximately 300 yards range." [Ref. 43] Cable's indictment of submarines is illogical as the commanding officer's "clumsy" decision to fire would have been performed no differently had the *L4* been a destroyer.

B. SPANISH CIVIL WAR, 1936-39

A prelude to the conflagration of World War II, the Spanish Civil War provided many glimpses of what was to come. Perhaps one of its most foreboding aspects was the technological advancements and application of aerial strategic bombing on civilian urban targets as the air power doctrine of Douhet had predicted. Since the Spanish Civil War was immediately followed by the Second World War, its historical importance has paled in comparison. Thus, the circumstances of clandestine submarine warfare conducted by non-belligerent nations is not well known.

Both the Nationalist and Republican forces had submarines at their disposal, and both utilized foreign submariners. The officer corps of the Republican submarine force was decimated by defections and executions; eventually Republican submarines were "commanded by Soviet captains overseen by Spanish political commissars." [Ref. 44:p. 6] Italy overtly provided Franco's rebel Nationalists with a total of six submarines. Two were transferred to the Spanish Nationalists, four more were considered "Legionary" submarines under the Spanish Nationalist flag, but manned by "volunteer" Italian officers and crews.

Additionally, Mussolini covertly employed his large submarine force to augment the Nationalist force with instructions to fly the Spanish flag if forced to surface. [Ref. 44]

Germany briefly contributed two submarines to covert support of the Nationalist cause, between 21 November and 20 December 1936. *U-34* sank the Republican submarine *C-3* on 12 December without being identified [Ref. 45] This contrasts with German aviation personnel and aircraft contributing to the Nationalist cause throughout the war. Mussolini also contributed 60,000 troops to the cause of Franco [Ref. 46].

German and Italian submarines covertly participated in campaigns against shipping bound for Spanish Republican forces. The "unknown submarines" sank shipping of various nationalities throughout the Mediterranean, but the tactic was designed to specifically deter Soviet aid. The identification of the "unknown submarines" became known circumstantially: first by torpedo fragments, then whole torpedoes were found beached and unexploded, and eventually, inadvertent tactical exposure. "The total results of 108 [110 including German] clandestine combat patrols were only 6 merchant vessels [and 1 submarine] sunk and 1 cruiser and 1 destroyer damaged." [Ref. 45:p. 97]

The sinkings were successful in considerably reducing aid and prompting Soviet second-thoughts [Ref. 46:p. 5], but they stopped when the British informed the Italians that submerged submarines in patrol zones would become legitimate targets as authorized by the 17 September 1937 Nyon Arrangement. Italy, seeking plausible deniability, chose the "unknown submarine" tactic because it did not wish to be ostracized by other European powers for siding against the Spanish Republicans and did not feel that the submarines would be opposed. Italy

eventually ceased the submarine campaign and joined the powers enforcing the "international agreement for collective measures against piratical attacks in the Mediterranean by submarines." [Ref. 3:p. 216, and Ref. 46:p. 6]

In summary, Italian (and initially German) submarines were used in a covert manner to support the rebel Nationalist forces; this provided plausible deniability for the non-belligerent nations. The submarine presence was not conveyed until the time of attack; the presence of "legal" combatant submarines complemented this tactic. By sinking shipping bound for Republican ports, including two Soviet merchant ships, the "unknown submarines" were able to deter Soviet assistance, since the Soviets were unable or unwilling to protect their merchants by deploying naval combatants in the Mediterranean. As a result of the purposeful sinking of neutral shipping, the acts were labeled as "piracy" and provoked an international agreement on the collective use of force to combat the "unknown submarine" menace. However, with rising nationalism in the Third World and the proliferation of advanced submarines to Third World nations a recurrence of a clandestine surrogate submarine campaign should not be discounted as a future possibility.

C. CUBAN MISSILE CRISIS, 1962

The 1962 Cuban Missile Crisis demands periodic "re-studying." With time, and thanks to the gradual de-classification of pertinent documents, additional and finer-grained information is becoming accessible about who exactly knew what and when at the time. Most reconstructions of events, however, are concerned with the crisis' *nuclear* dimension. By contrast, comparatively little is known in the public domain on the *underwater* aspects of the superpower stand-off. The best treatment of Soviet submarine activities during the missile crisis

that has been found by this author is Johns' *The Naval Quarantine of Cuba, 1962* [Ref. 47].

According to Johns there were six positive Soviet submarine contacts in the vicinity of Cuba during the period of crisis.[10] The first, a *ZULU*-class submarine, was observed on the surface during a mid-Atlantic refueling from a *TEREK*-class submarine support ship on 22 October, before President Kennedy's quarantine announcement that evening. There has been some speculation that submarines were being used to transfer the nuclear warheads [Ref. 48]. The *ZULU* apparently directly returned to a northern Soviet port without becoming involved with the U.S. quarantine. All subsequent positive submarine contacts resulted after the imposition of the quarantine at 1000R 24 October.[11] [Ref. 47: pp.147-8]

Robert Kennedy mentions the *ZULU* in his account of the missile crisis, *Thirteen Days* [Ref. 49]. Although, it was later proven that the *ZULU* headed north, he asserts that it was headed toward Cuba [Ref. 49: pp. 61-2]. This *perceived*

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[10] "Submarine contacts are divided into three primary categories depending on the method and analysis of all aspects of detection--positive, probable, and possible. A submarine contact can only be classified positive when all or part of the submarine is sighted and identified by personnel considered qualified and competent to identify the portion of the submarine sighted. A probable submarine is one in which the methods of detection and tracking meet all of certain promulgated criteria, which generally require that the submarine be tracked for a minimum time period by at least one equipment and confirmed by a second technique or equipment. . . A possible submarine is one that may be assigned by competent personnel to a contact which does not meet the requirements for a positive or probable but yet possesses sufficient characteristics to prohibit its being classified a non-submarine." CNO, "Historical Narrative," Appendix 14, as cited in Johns [Ref. 47].

[11] Times in this section are expressed in the military format as follows: HHMMZ; where H = hour; M = minute; Z = time zone. There are three time zones of interest: Zulu (Z) or Greenwich Mean Time is a world wide military standard time, Romeo (R) is the Washington D.C. time zone and is five hours later than Zulu time, Moscow time is in the Bravo Zone, Two hours before Greenwich and seven ahead of Washington D.C.

tacit submarine threat against the impending quarantine was cause for concern. According to Kennedy:

> The President ordered the Navy to give the highest priority to tracking the submarines and to put into effect the greatest possible safety measures to protect our own aircraft carriers and other vessels. [Ref. 49:p. 62]

Kennedy has also reported that, on Wednesday 24 October, just after the quarantine went into effect, the White House received news from the Navy that a Soviet submarine was positioning itself between two Soviet merchants approaching U.S. Navy warships forming the quarantine line. The President was annoyed that the first confrontation of the quarantine would be with a Soviet warship--particularly a submarine. He reportedly wondered, "Isn't there some way we can avoid having our first exchange with a Russian submarine--almost anything but that?" [Ref. 49:p. 70] The aircraft carrier *Essex* was assigned to make the first stop since it could signal the submarine to surface with sonar, while shielded by its own ASW helicopters. This submarine contact was not mentioned again by Robert Kennedy, because after the Soviet merchant ships stopped dead in the water and turned back a few minutes later, the President issued an operational hold order to the Navy to prevent provoking the situation. [Ref. 49:p. 69-72]

At this point, according to Elie Abel [Ref. 50], the military chiefs at the Pentagon suspected and advised the ExComm[12] that the Soviet merchants might be rendezvousing with submarines before attempting a forced penetration of the quarantine line [Ref. 50:p. 142]. Although the rendezvous did not materialize, the chief's suspicion suggests that they were quite cognizant that the submarine has

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[12] As the *ad hoc* formation of the "Executive Committee" of the National Security Council had become known.

at least the *potential* to assume a coercive posture below the threshold of actual violence.

Alexander George [Ref. 51] has opined that Kennedy's account of the crisis implies that the submarine or submarines were forced to surface (about 1030R) prior to the merchants turning back, although he notes that this conjecture could not be substantiated (at the time of his writing, 1971) [Ref. 51:p. 113]. Johns has noted that the first "positive" submarine contact after the quarantine had gone into effect did not occur until 1929Z 24 October or (subtract 5 hours) 1429R--some hours after the merchant ships stopped and turned back [Ref. 47:p. 147]. It was located several hundred miles inside the quarantine zone.

Earlier that same morning (1500 Moscow time), Khrushchev scheduled an impromptu appointment with William Knox, President of Westinghouse International, a visiting U.S. businessman who became Khrushchev's personal messenger. According to Abel:

> He [Khrushchev] wanted the President and the American People to know, . . ., that if the United States Navy tried to stop Soviet ships at sea, his submarines would start sinking American ships. And that would mean a third world war. [Ref. 50:p. 140]

This information did not become available to the President immediately; Knox departed Moscow the next day (25 October) and reported to the Administration on arrival. [Ref. 50:p. 40]

Johns has this to say about Khrushchev's warning: "The U.S. Navy must have considered his threat to . . . Knox to sink warships with his submarines as totally vacuous in view of the extensive U.S. Navy ASW activities in the Western Atlantic and Caribbean at that time." [Ref. 47:p. 254] This opinion misses the purpose of Khrushchev's statement. The warning to Knox was made on 24 October, i.e. before the full extent of the submarine threat was known by Washington. By the time

Knox's message reached the White House, only two submarines contacts had been classified "positive." Khrushchev made his coercive comment not for the benefit of the U.S. Navy, but for the ears of the President. Moreover, the Navy's ASW harassment activities arguably provided the Soviet submarines with a target-rich environment, thus potentially enhancing the credibility of Khruschev's threat.

A *FOXTROT*-class submarine, pendant no. 945, suffered a severe engineering casualty that forced her to remain surfaced after 2130Z 30 October; Johns notes that USS *Keppler* remained in company until the Soviets were able to provide assistance, some ten days later [Ref. 47:p. 148]. Scott Sagan asked Robert McNamara, Secretary of Defense for President Kennedy, during an interview documented in *On the Brink*, if he was aware that a Soviet submarine had been crippled during the Navy's submarine harassment operations. After acknowledging the risk involved in the harassment operations, McNamara conceded that, "We didn't know at the time that we'd injured a Soviet submarine . . .." [Ref. 48:pp. 61,63]

Cable's claim that the Soviets failed in their effort to use submarines in the naval diplomacy role is relevant only if that had been the Soviets purpose in fact. Johns makes an excellent case that this simply was not so. All the submarines were *en route* or in the quarantine zone prior to President Kennedy's 22 October announcement. Arguably therefore, their initial tasking was something other than to serve as a coercive presence. Khrushchev's (belated) acknowledgment that his country's submarines were indeed in the vicinity can conceivably be construed as the Soviet Union's one attempt to convert their "latent" coerciveness (at best) into an "active" one. The *Zulu*-class boat, first observed in the mid-Atlantic, was

not forwarded to the quarantine zone. Two submarines initially located well within the quarantine zone itself did not move appreciably from point of initial detection despite near constant harassment. The three other detected submarines transited eastward or north and left the quarantine zone. All the submarines in the quarantine zone were conventionally powered. One would suspect that had coercion been intended, the Soviets would have used their new nuclear-powered *NOVEMBER*-class attack submarines.[13] And finally, when forced to surface under harassment, some Soviet submarines complied with surfacing procedures promulgated by a U.S. Notice to Mariners, evidently relayed by Moscow [Ref. 47:pp. 149-50].

If it is true that the Soviets never did endeavor to use their submarines in a naval diplomacy role, then it follows that Cable's argument that the Soviets failed on this count becomes a straw-man. The same applies to Alexander George's claim that the submarines "were leading and attempting to shield the merchant vessels approaching the quarantine line." [Ref. 51:p. 112, and Ref. 47:pp. 150-1]

In truth, submarines happened to be the only naval asset readily available to Khrushchev for operations in an "out of area" locale as distant as the Caribbean. It is doubtful that they were dispatched to perform a anti-quarantine naval diplomacy role *per se*. It is true, of course, that their presence might have evolved to a coercive one, but that other events preempted this contingency. The Soviet submarine presence was "signalled" by inadvertent tactical exposures, which, again suggest that naval diplomacy was not initially intended. Ascertaining the real purpose of the Soviet submarines remains pure conjecture,

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[13] According to the 1962-63 edition of *Jane's Fighting Ships* the Soviet Navy had four operational *NOVEMBER*-class attack submarines.

but the implications of their *perceived* purpose are easily seen: the U.S. Navy embarked on an extensive ASW campaign to try and neutralize the submarines *perceived* coercive potential. Moreover, regardless of whether Khrushchev intended to use the submarines dispatched as a diplomatic "signal," clearly President Kennedy appears to have appreciated the Navy's ASW campaign as much as a *political* message as a *tactical* counter.

D. SUPERPOWER NAVAL STANDOFFS 1967–1973

Unlike the Cuban Missile Crisis, submarines were not a specific focus in the course of the superpower naval standoffs during the 1967 and 1973 Arab–Israeli wars. The major literature on these events only mentions submarine involvement in passing, in part perhaps for reasons of security classification [Ref. 38]. However, the lack of literary attention does not necessarily mean submarines did not influence events.

1. June 1967 Arab–Israeli War

The Mediterranean in the post World War II period has been a fertile theater for coercive use of naval power. At least two instances prior to the 1967 war suggest that the Arab world was sensitive to the naval diplomatic potential of submarines. During the 1957 Syrian–Turkish crisis, the Soviet Navy made its first port visit to a Third World country, i.e. Syria. The Egyptian press, making the most of the Soviet gesture on behalf of the Arab cause, inflated the size of the Soviet flotilla from a cruiser and a destroyer to "a cruiser, three destroyers and *several submarines equipped with guided missiles.*" (emphasis added) [Ref. 52] The next year, the Egyptian press again raised the specter of a Soviet naval show

of force in the wake of the U.S. intervention in Lebanon. Dismukes and McConnell have reported:

> In late June an Egyptian press headline had declared: "Russian Submarines in Albania Supplied with Atomic Missiles." In fact, there were no submarines in Albania at the time; they came there in August--of course, without missiles--only after the crisis was over, a week after the U.S. had already begun withdrawing marines from Lebanon; and they came unannounced either by Moscow or the Arabs. [Ref. 52:p. 246, as cited in Ref. 4:p. 11]

These press headlines indicate two things: first, that the Egyptians expected that *submarines* would be at the heart of a Soviet naval coercive effort in the Mediterranean, and, secondly that, from the Egyptian point of view, submarines, or at least *Soviet* submarines possess a coercive value. Given that submarines are the Soviet Navy's "capital ships," it stands to reason that the latter will have an inordinately high "visibility" in the Soviet practice of naval diplomacy.

Maximum Soviet submarine strength during the June 1967 war was ten; some reports cite a number, as high as twelve [Ref. 53]. Unlike later "routine" deployments of several cruise missile submarines, only one cruise missile submarine was evidently involved, along with one nuclear-powered and eight conventionally-powered attack submarines. The submarine strength of the *Eskadra* was significantly greater than reported in the U.S. press which only reported two or three Soviet submarines [Ref. 53:p. 49n]. These 10 submarines were *complemented* by a maximum surface combatant strength of 27, including 10 destroyer-size or larger ships. Thus, the submarines amounted to 27 percent of the total combatant force, but as much as 50 percent of the *major* combatant force.

During the Six Day war neither the Soviet Fifth *Eskadra*, nor the U.S. Sixth Fleet was reinforced, although the Soviets could have drawn on their relatively large (33 major surface combatants) pool of Black Sea combatants. The

1967 stand-off marks the first occasion that Soviet naval power was concentrated for explicitly diplomatic purposes, and although weak in relation to the two opposing U.S. carrier battle groups, the *Eskadra* "was strong enough to have political impact." [Ref. 4:pp. 160-1,168]

In summary, submarines were used as an integral part of the *Eskadra*'s purpose of deterring Sixth Fleet intervention to the detriment of the Egyptian or Syrian states. Their presence was presumably conveyed through tactical and intelligence means. Also, this event marks the introduction of the now familiar Soviet Anti-Carrier Warfare (ACW) groups which usually include submarines.

2. September 1970 Jordanian Crisis

Soviet objectives during the Jordanian Crisis appear to have been very similar to those in the June 1967 war. The most important task of the Soviet Fifth *Eskadra* was to deter active intervention by the U.S. Sixth Fleet. The *Eskadra* grew in size from 47 to 60 total ships, and the number of major surface combatants rose from eight to 13. A total of about 14 Soviet submarines was involved, including four cruise missile submarines, of which two arrived the first week in October to reinforce the normal complement of two. Thus, submarines were 23 percent of the total force and, again, roughly 50 percent of its major combatant complement. It is possible that two missile submarines left the Mediterranean at the end of their normal deployments. Had the retention or release of these submarines been made clear, a plain signal indicating the degree of Soviet resolve would have been made. Such a signal was made during the 1973 Arab-Israeli War. [Ref. 4:pp. 171-2]

One difference between this period of heightened Mediterranean tension and the 1967 war, was that regular Fifth *Eskadra* ACW exercises had been

conducted the previous two years so that these formations had become easily recognizable to the Sixth Fleet. When a third U.S. carrier was ordered to the Mediterranean, the Soviet's advanced beyond "tattletale" tactics and positioned ACW groups near the U.S. carriers. Stephen S. Roberts explains:

> In the ordinary configuration of a Soviet ACW group a destroyer or frigate would remain within a few miles of a U.S. carrier, while a cruiser armed with surface-to-surface cruise missiles (SSMs) would remain at a greater distance from but near, if not within, firing range of the carrier. (Gun cruisers are sometimes substituted for SSM cruisers, probably due to operational necessity. The cruiser is sometimes escorted by a SAM [surface-to-air missile] destroyer.) An invisible component of the ACW group, consisting of an SSM submarine of the *Echo*-II, *Juliett*, or *Charlie* classes, and one or more torpedo attack submarines is also presumably in the area--although, once again, not necessarily within range. [Ref. 4:p. 173]

Roberts understood that the submarines were the major deterrent force in these Soviet tactical groupings. He makes this point and then continues the discussion with examples of Soviet diplomatic signaling with submarines:

> Although the Soviets relied on the movements of their major surface combatants to provide ACW forces with their potential for diplomatic impact, the principal striking power of these groups clearly lay in their submarine component. Normally, the Soviets do not intentionally reveal the position of their submarines during crises. However, for a period of over two weeks during the Jordanian crisis, a *Juliett*-class SSM submarine operated on the surface. During seven days of this period it was accompanied by two surfaced *Foxtrot*-class torpedo-attack submarines. This action came as the crisis ashore was winding down. It may well be that the surfaced operations of these submarines reflected an unusual attempt by the Soviets to reduce the "threat" posed by the Fifth *Eskadra* by making its submarines more vulnerable. While it is less likely, the action may also have been the result of operational difficulties experienced by the *Juliett*. [Ref. 4:p. 173]

Not knowing the details of the surfaced *Juliett* movements in relation to the U.S. carrier battle groups, Roberts must be taken at his word that this was a signal of reduced threat. Both the *Juliett* and *Echo* classes of cruise missile submarines are required to surface before firing their missiles, thus the surface operations may have served to reduce the time required for weapons employment. Deployed in this fashion an SSM submarine is little different from a

"conventional," i.e. surface SSM combatant. Also, this series of superpower standoffs suggest that naval tensions do not unwind immediately in parallel with relaxation in tensions ashore, but that instead a significant lag factor appears involved.

A larger point must be made. Tactical intelligence provides the CBG commander with information about the submarine threat. Thus, submarine presence, normally a tactical concern, bolsters the diplomatic impact of surface combatants. If submarines are supporting surface ships conducting a diplomatic role, then a *prima facie* case exists that submarines are performing a diplomatic role. In what has become a standard pattern, a portion of the Soviet submarines involved in exercises and other diplomatic shows of force, routinely surface for prolonged periods and/or subsequently make highly visible port calls to friendly nations in the vicinity. This exposure is tactically unnecessary, and can therefore be assumed to have some diplomatic meaning. Even if surface operations are intended to no more than to convey a relaxation of tensions, they clearly highlight the fact that submarines are participants in coercive diplomatic situations. In peacetime, the general public are usually ignorant of the whereabouts of submarines; come crisis, the Soviet Union appears to have gone out of its way to raise public awareness.

3. December 1971 Indo-Pakistani Crisis

This episode is interesting because it is one of the few naval diplomatic events in recent history in which a U.S. submarine is known to have participated. However, all references to the involvement of USS *Scamp* found by the author are limited to the 1972 Congressional testimony of Admiral Rickover concerning funding for nuclear-powered surface ships [Ref. 54]. According to Rickover, *Scamp*

and the aircraft carrier *Enterprise* were the only nuclear powered warships in Task Force 74.[14] This statement was obviously not meant for timely deterrent value, and was evidently not intended to signal that future opponents should include the presence of U.S. submarines in their crisis calculations.

The initial Soviet presence in the Indian Ocean prior to the crisis was true to the established pattern. A single *Foxtrot*-class torpedo-attack submarine amounted to 25 percent of the overall Soviet naval combatant presence, and 50 percent of the major combatants--the only other being a gun destroyer. The Soviets reinforced this presence with two separate ACW groups from the Pacific Fleet. The maximum strength of the Soviet major combatant force was reached in early January, and included five destroyers or larger surface combatants and six submarines, two of which were SSM equipped. Therefore, just over one-half of the major combatant contingent entailed submarines when the naval response was at full strength. [Ref. 4: pp. 179-80]

4. October 1973 Arab-Israeli War

The initial Soviet Fifth *Eskadra* force level was about 60 ships, again with submarines adding up to 25 percent of the total and approximately 50 percent of the major combatants. A peak strength of 22 major surface combatants occurred between 31 October and 4 November. The submarine level rose from 16 to a maximum of 23 on 31 October, when the units that were normally scheduled to return home were reinforced by a Northern Fleet relief flotilla [Ref. 55], i.e. "the relieving force became reinforcements." [Ref. 4:p. 194] Again, at its peak, there was an even balance between major surface combatants and submarines, 22 vs. 23.

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[14] According to Zumwalt [Ref. 55:pp 360-7] the purpose of Task Force 74 was to demonstrate a U.S. policy "tilted" toward Pakistan.

Roberts has attempted to break down the Soviet surface composition according to different war missions. He listed: AGI (intelligence gathering), Anti-USN, Resupply of Egypt, and Resupply of Syria. The peak number of surface combatants that Roberts attributed to the Anti-USN mission came to 15. Since submarines do not readily lend themselves to resupply or the AGI roles, it can be assumed that all 23 units were performing Anti-USN duties. If these numbers are true, then the different U.S. carrier and amphibious task forces faced more submarines than surface combatants, with submarines providing 60 percent of the major ACW combatants. [Ref. 4:pp. 208-9]

Given this high profile of the submarine involvement in cases of Soviet naval diplomacy, it is easy to see why Roberts challenged Cable's view that submarines are "inherently ill-suited" for this role [see chapter 2, page 11]. Perhaps this is the best place to conclude Roberts argument with this quotation:

> Though this [Cable's] proposition may well apply to the days when submarines operated alone or in wolfpacks, it has questionable application to the modern Soviet Navy whose submarines, with vastly more powerful armament, are employed as an integral--indeed the Soviets say "leading"--component of their tactical groupings. Moreover, the image of "a graduated ladder of violence" [Ref. 3:p. 152] as a means of signalling intention was relevant to the past (and may remain relevant in other contexts today), but seems of uncertain relevance to U.S.-Soviet naval confrontations in the era of the "battle of the first salvo." [Ref. 4:p 212n]

Roughly 50 percent of the major naval combatants deployed by the Soviets in recent periods of international crisis has been submarines. If submarines are only meant to bolster the position of Soviet surface combatants conducting coercive diplomacy, then--by extension--submarines are fulfilling a naval diplomacy role. Submarine presence is conveyed by intelligence and tactically for the naval audience, and for professional reiteration and the public, by periods of surface operations and/or port visits. Submarine *force* was utilized

integral to ACW groups by the presence of surface ACW group components and actual submarine participation in ACW exercises, sometimes with U.S. carriers as targets. One benefit of Soviet submarine use have been that more uncertainty has been introduced into the protection of U.S. naval formations. Political repercussions of submarine use for the Soviets have yet to be identified.

E. FALKLAND ISLAND CRISIS, 1982

On 2 April, 1982, Argentina invaded the Falkland Islands. The British military response was unexpected. After the Islands had been retaken, the question was asked in Great Britain whether the Government had acted appropriately prior to the invasion. A Committee of Privy Counsellors was commissioned to investigate and report to Parliament. The product was the *Falkland Islands Review*, chaired by the Rt. Hon. The Lord Franks, hereafter referred to as the Franks Report [Ref. 56].

The British SSN, HMS *Spartan*, received orders on 29 March to deploy to the South Atlantic to "support" the Royal Navy ice patrol ship HMS *Endurance* at South Georgia. *Spartan* departed on 31 March. Another SSN, HMS *Splendid*, received orders for South Atlantic deployment on 30 March, and departed on 1 April. A third SSN, HMS *Conqueror*, was earmarked for deployment, but had final orders withheld pending developments, on 30 March. British intelligence first received positive intelligence on Argentine invasion preparations on 31 March. Three SSNs were given some type of tasking in direct response to a *diplomatic* situation *prior* to it becoming a *military* situation. This sequence amounts to a clear indication that the Royal Navy and the British Government foresaw a naval diplomatic role

for the submarine. HMS *Conqueror* departed for patrol on 4 April. [Ref. 56:pp.61-4]

The Ministry of Defence's first suggestion to Prime Minister Thatcher's office of the diplomatic use of submarines occurred on 26 March in a note that included:

> . . . a passage discussing the possibility, at the outset of a period of rising tension with the prospect of Argentine military action against the Falklands, of deploying a nuclear-powered submarine to the region, either covertly or overtly as a deterrent pending the arrival of further naval reinforcements. [Ref. 56:p. 59]

This was not a novel event. Nearly five years earlier, in late 1977, indications of possible Argentine hostile intent prompted the British to,

> . . . buttress the Government's negotiating position by deploying a force of sufficient strength, available if necessary, to convince the Argentines that military action by them would meet resistance. Such a force would not be able to deal with a determined Argentine attack, but it would be able to respond flexibly to limited acts of aggression. The Committee agreed that secrecy should be maintained about the purpose of the force. One nuclear-powered submarine and two frigates were deployed to the area, the submarine to the immediate vicinity of the Islands with the frigates standing off about a thousand miles away. Rules of engagement were drawn up. [Ref. 56:p. 18]

On 5 March 1982, Lord Carrington, then Great Britain's Foreign Minister, was informed of this action by the previous Labour Government. He inquired whether the Argentines had been aware of the 1977 deployment, and when told they had not, did not pursue the matter. No recommendation to investigate a similar response resulted from this discussion. When later interviewed about this discussion, Lord Carrington took the view that the covert nature of the 1977 deployment made any usefulness from a similar deterrent deployment doubtful at that point in the crisis. Also, he revealed that, with hindsight, and while he personally felt he did not have enough justification to deploy a submarine on 5 March, he wished SSN deployment had occurred earlier than it actually did. [Ref. 56:pp. 45, 87-8]

This was a missed opportunity. Author Gavshon and Desmond Rice in their book, *The Sinking of the Belgrano* [Ref. 57], make this point explicitly. They report that in 1977, then Foreign Minister, David Owen made arrangements for the covert naval presence. However, James Callaghan, then Prime Minister, contends that the Argentine Government had been informed. Press reports in 1982 indicate that the United States informed the Argentines in 1977 on behalf of British. The Franks Report found no evidence of Argentine knowledge of the 1977 deployment [Ref. 56:p. 91]. Rice and Gavshon's point being that: "Whether or not the Argentines had been warned in 1977, in 1982 Lord Carrington knew of no useful precedent for using a naval presence for purposes of deterrence." [Ref. 57:pp. 9-10]

If the Argentine knowledge of the 1977 deployment could have been verified, based on the positive outcome of the December 1977 negotiations, the deterrent value of the overt SSN deployment might have been utilized much earlier--possibly deterring the 2 April Argentine invasion. Despite the initial covert nature of the 1977 deployment, the failure to "signal" presence prevented early implementation of a plausible strategy in 1982. After the success of the 1977 negotiations an appropriate signal could have been sent by an SSN visit at Port Stanley.

Another alternative was the early covert, non-provocative deployment of the SSN to be utilized in an overt interpositioning strategy once positive indication of the Argentine invasion was received, essentially a repeat of the 1977 strategy. This latter diplomatic strategy was attempted when *Spartan* was ordered South on 29 March, but Lord Carrington's three week delay nullified these efforts.

Positive indication of Argentine invasion was received on 31 March. With SSNs already ordered South, but not yet underway, a front page *Times* headline story reported the nuclear-powered submarine, HMS *Superb*, as having been re-routed South from exercises near Gibraltar "several days ago." The next day, 1 April, the *Times*, again on the front page, commented:

> The report involving . . . [HMS *Superb*] is beginning to look more and more like a controlled leak which need not even be true to have the desired effect. The Royal Navy has refused to confirm that *Superb* was on its way to South Georgia.

Conjecture in the press as to the whereabouts and purpose of *Superb* continued throughout the first three weeks of April, until *Superb* was confirmed in its home port of Faslane on 21 April [Ref. 58]. This could be viewed as an attempt at pre-invasion deterrence and post invasion perception management on the part of the British. Lord Carrington, however, took a negative view, and noted that the Argentines might receive "the impression that the British were seeking a naval rather than diplomatic solution." [Ref. 56:p. 66] Lord Carrington's concerns over the press reports were probably genuine, however, the possibility that a deliberate government attempt at disinformation may have been involved in fact cannot be ruled out. This is especially so in light of the coinciding intelligence discovery of an early morning 2 April invasion time. On 9 April, The *New York Times* printed a press report that head-lined, "Four Nuclear Subs Will Spearhead British Flotilla," and stated that the 8 April dateline had been "confirmed" by "military sources." There were few reasons to doubt these reports in the British press, considering the build-up of the naval Task Force following the invasion.

HMS *Spartan* achieved visual landfall on the Falklands on 12 April. This coincided with the British declaration of the 200 nm. Maritime Exclusion Zone (MEZ). *Spartan* had arrived in her patrol area the day before. The submarine

blockade of Argentine shipping around the Falklands was not perfect, as one confirmed instance of seaborne replenishment occurred undetected and the Argentine airborne supply effort to the islands continued. The dual political/military nature of the submarine blockade was substantiated by the Government's refusing permission to attack a minor Argentine combatant, as described by Martin Middlebrook [Ref. 59]:

> The Argentine naval-landing ship *Cabo San Antonio* was spotted off Stanley on four consecutive days, apparently laying mines, but *Spartan* was refused permission to attack, partly to conceal the presence of the submarine for attacks on larger targets but mainly to avoid opening the shooting war too soon and compromising the diplomatic efforts still being pursued. [Ref. 59:pp. 97-8]

On 23 April the British, "warned that any approach by Argentine forces which could amount to a threat to interfere with the mission of British forces in the South Atlantic would be dealt with appropriately." [Ref. 60] On 30 April the British established a 200 nm. Total Exclusion Zone (TEZ) around the Falkland Islands [Ref. 61].[15] This timing roughly coincided with the arrival of the main British Task Force. The Argentine Navy was at sea patrolling just outside the TEZ in four task groupings. The Argentine aircraft carrier, *Vienticinco De Mayo* (25th of May) led one group and the cruiser ARA *General Belgrano* led another. The two

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[15] According to CDR D. Peace [Ref. 61], there was effectively no difference between the Maritime Exclusion Zone (MEZ) and the Total Maritime Exclusion Zone (TEZ) as stated and enforced by the British. Both the MEZ and the TEZ excluded *all* Argentine shipping, as opposed to the U.S. Quarantine of Cuba which excluded only specific cargoes and let non-offending cargoes pass. As the author understood his explanation the term "exclusion" zone semantically equated to "war" zone.

CDR Peace also explained to the author that it is not U.S. policy to use or recognize "exclusion" zones, because of implications and precedents that might impact on the longstanding U.S. position on freedom of navigation. The U.S. position is to establish "warning" zones that communicate to all vessels a potential risk and to specifically place at risk those vessels not observing "warning" zone requirements, but this policy does not exclude any vessel.

other groups were comprised entirely of destroyers and frigates. [Ref. 62:pp.17-8] The positioning of Argentine forces resembled a classic pincher movement with the *Belgrano* group Southwest of the Falklands and the Argentine carrier Northeast on each flank.

A political decision had been made in the British War Cabinet to take action against the Argentine Navy in an effort to reduce the naval risk to the Task Force. This was deemed especially necessary after an aborted attack by the *Vienticinco De Mayo* in the early morning of 2 May. The Argentine carrier had penetrated the TEZ and had been detected by a Harrier patrol just after midnight local time on a course to attack the Task Force. It eventually closed the range to within 180 nm. of the Task Force before light winds prevented the launch of the heavily loaded Argentine attack aircraft. The *Vienticinco De Mayo* escaped undetected. The only available target on the afternoon of 2 May was *General Belgrano*, which was outside the TEZ and was being shadowed by HMS *Conqueror*. The War Cabinet had been contacted about noon (London time) with a request for permission to attack *Belgrano*. After a twenty minute discussion, permission was granted and messages were passed to all submarines, "authorizing them to attack any Argentine warships." [Ref. 59:pp. 145-7]

Conqueor's attack on Belgrano was the first time any SSN had fired a warshot in anger. Commander Christopher Wreford-Brown, Commanding Officer, described his attack as, "tedious rather than operationally difficult." He has explained that he chose to use the World War II-vintage Mark 8 torpedo instead of a modern *Tigerfish* because of its heavier warhead. He has also revealed that his first post-attack thoughts were of evasion, rather than remaining to attack the two accompanying destroyers. [Ref. 59:pp. 148-9]

On 7 May the British announced a warning that "any Argentine warship or military aircraft over 12 miles from the Argentine coast would be treated as hostile." [Ref. 60:p. 5] The Argentine Navy never again ventured beyond this line. The following British assessment of the SSN contribution to the campaign is provided in the Ministry of Defense report to Parliament, *The Falklands Campaign: The Lessons* [Ref. 60]:

> Our nuclear-powered submarines (SSN) played a crucial role. After the sinking of the *General Belgrano* the Argentine surface fleet effectively took no further part in the Campaign. The SSNs were flexible and powerful instruments throughout the crisis, posing a ubiquitous threat which the Argentines could neither measure nor oppose. Their speed and independence of support meant that they were the first assets to arrive in the South Atlantic, enabling us to declare the maritime exclusion zone early. They also provided valuable intelligence to our forces in the total exclusion zone. [Ref. 60:p. 17]

Five SSNs and one conventionally-powered British submarine operated in the South Atlantic during the Falkland crisis. The Argentine Navy operated two submarines during the campaign and, as in the British case, the world press assisted in advertising their threat. The first was *Santa Fe*, which inserted troops during the 2 April invasion. However, it was caught on the surface during reinforcement operations at South Georgia, and damaged by British helicopters using anti-ship missiles and depth-bombs. The *Santa Fe*, an ex-U.S. Guppy class submarine, sank after being abandoned at the pier in Grytviken, South Georgia. The *San Luis*, a German built type-209 submarine, operated against the British Task Force for several days with disappointing results due to "material problems" with both primary and backup fire control systems [Ref. 62:p. 63]. Unknown to the British, two other Argentine submarines, another type-209 and another Guppy class, were not operational during the conflict. These unaccounted for submarines kept the ASW picture of the British Task Force very uncertain. British ASW efforts

expended large amounts of ordinance at higher rates than expected against a single submarine operating against the British Task Force without results [Ref. 62:p. 34-6]. The Argentine submarines were an announced threat to the British Task Force; however, their inability to produce measurable results negated their coercive value. The torpedoing of one of the British ASW carriers or a troop transport during the San Carlos landings might have changed the political climate in Britain radically, perhaps as much as the sinking of the *Belgrano* had changed the political climate in Buenos Aires, once the truth became known to the Argentine public.

The U.S. Navy version of the Falklands war "lessons" [Ref. 62] looked at the involvement of submarines by both sides and provides some similar findings.

> Submarines played a significant role in the Falklands conflict by their actual operations and by the threat of their actions. The loss of a British aircraft carrier or troop transport to submarine attack might have curtailed the entire British operation.
>
> Similarly, the British SSNs appear to have served as a deterrent to Argentine surface naval operations, especially after the sinking of the *General Belgrano*. British submarines also served in the reconnaissance and intelligence collection roles. [Ref. 62:p. 63]

The Department of the Navy report, *Lessons of the Falklands*, goes on to suggest how the U.S. could apply these lessons in the future:

> In a similar crisis or conflict the U.S. Navy could employ its attack submarine force in the same manner. Additionally, U.S. SSNs could provide direct support to carrier battle groups, increasing their ASW effectiveness, while the submarine-launched Harpoon and Tomahawk missiles provide enhanced anti-ship and strike capabilities to SSNs. The operating characteristics of SSNs also permit their early, clandestine deployment in time of crisis, giving increased flexibility to national leaders. [Ref. 62:p. 63]

In summary, submarines were originally utilized as a quick reaction platform to provide naval presence in a distant ocean area, until a robust surface task force could arrive. This was to be a covert action to be disclosed at a latter time

for diplomatic leverage; however, the Argentine invasion of 2 April circumvented the original deterrent purpose of the submarine deployment.

The presence of the British submarine was conveyed originally through an apparently false leak to the press. It is nearly impossible to determine if this leak was intentional on the part of the Government, but subsequent leaks on the movement of SSNs began to gain the appearance of press releases. With the early 8 April announcement and 12 April enforcement of the MEZ, prior to any visible surface forces being present the Argentines must have assumed that it was being enforced by submarines. If submarines were not physically present, the press releases and/or leaks provided a credibility that made the MEZ more than a paper blockade. Although there were Argentine violations of the MEZ, the volume of maritime reinforcement of the occupied Falkland Islands was reduced to below detectable levels, suggesting that a submarine-enforced MEZ produced the desired effect.

The submarine presence was a coercive force that allowed enforcement of the MEZ from 12 April until 30 April. The Argentine Navy came out to meet the Royal Navy that announced its presence with the establishment of the TEZ and the initiation of strike operations against the Port Stanley airfield and surrounding areas. On 2 May, the Argentine Navy demonstrated that it presented an unacceptable risk to the British Task Force. The SSN, the political weapon of choice, provided a violent deterrent demonstration. If *Conqueror's* attack had been carried out by Royal Navy Harriers or Exocet missiles, it would not have had the same deterrent effect. As it was, the Argentine Navy was coerced into believing it lacked the equipment, confidence, and perhaps the competence to meet

the SSN threat. As a result the 7 May British warning to the Argentines not to exceed the 12-mile limit went unchallenged by the Argentine Navy.

Unquestionably, the sinking of the *Belgrano* created political and moral repercussions for the British. The force of world public opinion that had recently aligned behind Britain was suddenly weakened. This loss was regained two days later, after the successful Argentine attack on the HMS *Sheffield* with an *Exocet* missile. These repercussions might have been mitigated, if the subtle and abrupt changes to the rules of engagement had been stated more clearly. The 23 April subtle warning statement was evidently not widely known to both the Argentines and the public. If it was known, it was not clear how it would be interpreted. The 2 May abrupt change to the rules of engagement were justified *post facto* and while being accepted on their own account, were publicly judged not to be congruent with the 23 April warning. Granted, this was the first instance a submarine had been used in this manner, and it is not the type of activity to be submitted to experimentation; but, perception management in international affairs is not a new science. Perception management of submarines in the Third World coercive diplomacy role is a new area of that science that requires greater study and prudence in practice.

There has been some speculation that one of the four British nuclear ballistic missile submarines (SSBNs), deployed to the South Atlantic during the Falklands crisis [Ref. 63]. This is unlikely, for several reasons.

First, the force level of four SSBNs is based on keeping one at sea on deterrent patrol at all times as a minimum deterrent. Since the deterrent target package of the Soviet Union could not be covered in the South Atlantic, a second SSBN would have been required to deploy South. This would have strained the

patrol rotation to the breaking point, because the length of the conflict could not be forecast and a third SSBN is usually unavailable in extended overhaul. The fourth SSBN, recently rotated off patrol, would need to limit the scope of its scheduled upkeep period to maintain seaworthiness, hedging against the possibility that the on-station SSBN could not continue patrol and required relief.

Second, although Argentina is a non-signatory to the Nuclear Proliferation Treaty and is thought to be a threshold nation, or proliferant, there was little to suggest that Argentina was in possession of nuclear weapons, nor did she have the capability to deliver one against Britain [Ref. 64].[16] And, since Argentina was desperately seeking the approval of world public opinion, it was unlikely she would use a nuclear weapon against the British Task Force. Third, Britain, as a "possessing nation" signatory the Nuclear Proliferation Treaty, was pledged to protect nations not in possession of nuclear weapons from nuclear aggression. The burden of proof would have rested with Britain to prove Argentine possession of nuclear weapons and the intent to use them.

Finally, the limited war strategy of the British campaign deliberately limited military action against the Argentine mainland. Some small contingents might have been inserted for tactical intelligence-gathering, but, by and large, the mainland was intentionally left unscathed. For the British, the Falkland Islands were the only point of contention, and it would have been counter productive to assault mainland targets for reasons of public opinion and limited conflict strategy. Thus, the deployment of an SSBN would have been entirely contrary to

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[16] See Eric H. Arnett [Ref. 64]. He discusses the conventional submarine-nuclear tipped torpedo combination as a possible nuclear weapon delivery means for emerging nuclear powers. He also notes, while Argentina has the submarines and heavy torpedo technology, it supposedly lacks the miniaturization technology necessary for a nuclear torpedo warhead.

the political context of the struggle and the limited war strategy actually followed. Even as a hedge against the unlikely Argentine use of nuclear weapons, the repercussion of an inadvertent press leak of a South Atlantic SSBN deployment would not have been worth potential gains.

This chapter has focused mainly on the use of conventionally armed submarines for diplomatic purposes. The above discussion suggest several reasons why nuclear armed submarines were not appropriate in this particular instance. That is not to say that nuclear weapons on submarines cannot be used for specific coercive diplomatic measures within the context of general nuclear deterrence. Chapter Six reviews events where SSBNs were used for strategic coercive signalling with respect to specific instances of raised diplomatic tensions.

VI. SUBMARINE "NUCLEAR" DIPLOMACY

A. STRATEGIC DETERRENCE WITH SUBMARINES

It is a common myth that the United States was the first nation to send ballistic missile submarines to sea. In truth, the Soviet Union edged out the United States by three years. The *Zulu*-V class submarine's ballistic missile capability was formally confirmed at-sea in May 1959, but reports of its existence had arrived in the West as early as 1956 [Ref. 65]. The USS *George Washington* was not commissioned until late December 1959. While the U.S. nuclear powered ballistic missile submarines (SSBNs) were conceived and built as a complement to the existing nuclear deterrent of land based bombers and missiles, there is some question over the intended mission of early Soviet ballistic missile submarine designs.

One view holds that the diesel-powered *Zulu*-V and *Golf*-class SSBs, and the *Hotel*-class SSBNs were designed mainly to attack *naval* targets on the U.S. seaboards such as aircraft carriers in port, naval communications, port facilities, etc., and especially for the mid-ocean anti-carrier warfare role during a NATO-Warsaw Pact conflict [Ref. 66]. This is entirely different from the "conventional" concept of SSBNs as a strategic, "city-busting," deep strike deterrent. It was not until after the emergence of the *Yankee*-class SSBN in 1967, with a corresponding change in Soviet doctrine, that most Western analysts concluded that Soviet SSBN

roles and missions were comparable with those of their U.S. counterparts [Ref. 67].[17]

If the Soviet and U.S. SSBN tasks and capabilities are roughly comparable, hardly the same can be said for their respective operating "styles."[18] The U.S. SSBN fleet uses a two-crew manning system. This system permits approximately one-half of the SSBN force to be on patrol at any given time. By contrast the Soviets maintain only a small fraction, about 15 percent, of their SSBNs at sea [Ref. 68]. This allows a majority of the fleet to be maintained at high in-port readiness levels while minimizing operational wear-and-tear, and, as a consequence, maintenance costs and requirements.[19] One drawback of this practice is that crews and equipments receive only a minimum of at-sea experience. From a "diplomatic" point of view, however, there may be certain

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[17] Moore, Flanigan, and Heisel [Ref. 66:pp. 170-3] take the view that the *Yankee* class was conceived and built for the mid-ocean anti-carrier role; however, development problems with the *SS-NX-13* anti-ship ballistic missile suggest a possibility that the long range "*SS-N-6* was intended as an interim fix . . . [that] seemed better suited for continental targets than for mobile naval targets." Since the *SS-NX-13*, apparently has never been deployed, their argument is that the *Yankee* backed into the "conventional" SSBN role.

[18] The author is very much aware of different debates concerning whether the Soviet SSBNs are to be used as part of a first strike or as the core of a withholding strategy. Similarly, for both nations it is uncertain whether SLBMs (submarine launched ballistic missiles) are to be used in a counter-force or a counter-value targeting strategy. With the advent of the D-5 Trident II missile, even a first-strike hard-target kill role is conceivable for the applicable portion of U.S. SSBNs. The focus is not on how the SLBMs will be used, but how the SSBNs are deployed, or could be deployed for diplomatic, coercive or otherwise, purposes short of nuclear or conventional war.

[19] It has also been suggested that this maintains the bulk of the SSBN force "at a short tether." The generals of the Strategic Rocket Forces exert operational control over the SSBNs, supposedly a measure of the Army's historic mistrust of the Navy. Ranft and Till [Ref. 68] suggest two other possible reasons for the low deployment rate: first, the maintenance of a surge deployment capacity, and second, a combination of environmental, geographic, and manpower problems with SSBN refits and nuclear power plant operations.

benefits. For one, the Soviets could claim the "high moral ground," with the argument that a low patrol tempo is another Soviet contribution to minimizing tensions at-sea. Such a claim glosses over the fact that the majority of Soviet SSBN fleet can now hit the majority of its strategic targets while still tied to the pier, but a "moral" argument rarely derives its persuasiveness from "facts" alone.

"Strategic" signalling may be easier with an SSBN fleet, at least 80 percent of which is normally withheld in port or in costal waters. Clearly, were the Soviet out-of-area SSBN fleet to suddenly swell to, say, 70 percent instead of the routine 15 percent, this would send a very strong coercive signal to Washington (provided anybody was still in town to receive it). A similar U.S. effort at strategic signalling would result in a theoretical increase from about 50% to about 70% over a period of several days.[20] The longer generation time is required in order to release SSBNs normally under upkeep. Of course, such "signalling" would not be viewed in isolation; both U.S. and Soviet SSBN augmentations would be part of a larger pattern of strategic crisis preparations and "bargaining."

No doubt, an increase in Soviet SSBN deployments from 15 to 70 percent in just a few days would be highly dramatic and, arguably, a "de-stabilizing" event, so much so, that one might be tempted to conclude that diplomacy has already failed, and war become inevitable. This view forgets that the definition of diplomacy also includes the use of force, coercive or violent, to obtain goals outside a nation's jurisdiction (see page 4). Diplomacy would still be possible, albeit under considerably more pressure, which, of course, may be the desired

[20] Ranft and Till [Ref.68] cite the Department of Defense Posture Statement for FY 1979, p. 28, as stating that the previous years *Poseidon* deployment rate had achieved 72 percent. This figure is impressive and fully supportive of the current U.S. deterrent policy, however, maintaining such a high deployment rate may make any attempt at strategic signalling with U.S. SSBNs less noticeable.

effect. Should this change in Soviet SSBN deployment scheme occur over a prolonged period, say a month, the diplomatic pressures would increase more slowly. If the change occurred over six months or a year, obviously the result of a sustained effort, it may only suggest a change in deployment strategy; thus, the diplomatic signalling aspect is subdued, while the nature of the threat change remains the same.

The remainder of this chapter is a review of instances where ballistic missile submarines have been used for political signalling. Again, for security reasons the details are sketchy, but enough is known of these events from open sources to suggest that SSBNs have periodically been deployed (or *re*-deployed) for political rather than purely operational reasons.

B. GENERAL STRATEGIC SIGNALLING

Blechman and Kaplan have delineated only four incidents where, "An overt and explicit threat was directed at the USSR through global actions of U.S. strategic forces. . . ." [Ref. 1:p. 47] These events were: the 1956 Suez crisis, the Lebanon intervention of 1958, the Cuban missile crisis in 1962, and the October 1973 Arab-Israeli War. Only the latter two cases could possibly involve U.S. SSBNs as part of signalling this "nuclear threat."

The U.S. Navy's SSBN force was only nine ships strong when the Cuban missile crisis occurred. Six SSBNs were on patrol prior to October 22, when President Kennedy made his quarantine announcement. When Soviet missiles were found in Cuba, the USS *Abraham Lincoln* was alongside her tender in Holy Loch, Scotland in the middle of a maintenance upkeep period. The new USS *Thomas A. Edison* and USS *John Marshall* had been commissioned but had yet to make their first deterrent

patrols. The *Abraham Lincoln* departed for her patrol station within 15 hours after notification on 21 October. The *Thomas A. Edison* completed her preparations and departed on 7 November. [Ref. 47:pp. 142-3]

Granted, these events were only a small portion of U.S. strategic preparations for the Cuban missile crisis, but the alteration of the *Abraham Lincoln*'s upkeep period was possibly the most visible signal available to the Soviets at the time. It is also possible that this was intended for military expediency rather than signalling, but nevertheless, it was a strategic signal.

It must be presumed that similar circumstances occurred during the October 1973 Arab-Israeli War. On 25 October, in an apparent attempt to deter Soviet intervention on behalf of Syria, the U.S. placed its military forces in defense readiness condition three (DEFCON 3). This included some strategic forces and it is a fair assumption that SSBNs in upkeep had their routine schedules visibly altered. Considering Soviet advancements in intelligence-gathering and direct Washington-Moscow communications over the "hot-line," the Soviets were not as reliant on U.S. SSBN deployment routines as a conspicuous source of strategic "signalling." In this instance the alteration of SSBN upkeep schedules would have served as operational confirmation of the announced DEFCON 3 "signal." In this second case, U.S. SSBNs were clearly involved in coercive diplomacy.

C. 1963 U.S. SSBN VISIT TO TURKEY

After the 1962 Cuban missile crisis, the United States removed its *Jupiter* intermediate range ballistic missiles (IRBMs) based in Turkey. To have simply removed the *Jupiters* without substitute, might readily have been interpreted by the Turks as further evidence that the American strategic guarantee had become

less certain. The USS *Sam Houston* (SSBN-609) visited Izmir, Turkey in April 1963. Thus, the United States Navy demonstrated, through a SSBN foreign port visit, that the U.S. strategic deterrent remained committed to the defense of Turkey and NATO's southern flank. [Ref. 47:p. 219, and Ref. 1:p. 48]

One author has questioned the wisdom of this strategic substitution:

> Regrettably, the *Polaris*-SSBN weapons system became a "substitute" deterrent for *Jupiter* IRBMs rather than an "additive" deterrent. Additionally, placing the SSBNs in the enclosed environs of the Mediterranean added to their vulnerability to Soviet detection, localization, and attack as compared to their near invulnerability in the open ocean environment for which they had been designed. [Ref. 47]

His argument is not without merit, but ignores some strategic realities. The *Jupiters* were liquid fueled and extremely vulnerable "soft" targets. These IRBMs were within easy range of a Soviet preemptive attack and possibly contributed more to "instability" than deterrent stability. Advancing missile technology had already made the *Jupiter* IRBMs obsolete, and they were difficult and no longer cost-effective to maintain. The removal of the *Jupiter* IRBMs was foreseen in 1962 and, due to the advent of land based ICBMs and submarine launched SLBMs, it was doubtful that they would be replaced by missiles based in Turkey. There were many good reasons to remove the *Jupiter* IRBMs from Turkey, especially if they could be traded for the Soviet *SS-4* and *SS-5* IRBMs in Cuba, with U.S. strategic commitments maintained by SLBMs.

Because the *Jupiters* were *land* based they had an intrinsic political value to the Turks. Removing the *Jupiters* stripped the Turks of a visible countervailing deterrent against Soviet IRBMs. When the *Jupiters* were removed, the Soviet IRBM threat remained, and the SSBN visit to Izmir signified a continued U.S. political and strategic commitment to Turkey. The rhetoric of extended deterrence would

have been meaningless to the Turks without a credible, "visible" strategic commitment that the *Sam Houston* visit provided.

Basing the U.S. nuclear deterrent on foreign territory creates strong political and military commitments that are not easily replicated by naval or other strategic forces. For this reason Sea launched Cruise Missiles (SLCMs) offered by the United States were deemed inappropriate by NATO as a deterrent response to Soviet *SS-20s*, when land based *Pershing II* and Ground Launched Cruise Missiles (GLCMs) were available as an Intermediate-range Nuclear Force (INF) deterrent option. It should be noted that this NATO dismissal of the SLCM option was specific to this situation and not a rejection of the principle of SLCM extended deterrence. While the specific threat of Soviet *SS-20s* has been removed, other threats may appear in Europe that may require an INF-like substitute. If this should occur, with the land base option precluded, as it was for the Turks, nuclear SLCMs provide an--again viable--substitute.

Commenting on *Sam Houston's* Izmir visit, Blechman and Kaplan report: "That port visit, the only such visit to a foreign port by a U.S. strategic submarine that we know of . . . ."[21] [Ref. 1:p. 49] Their work was published in 1978. It so happens that by the late 1970s the U.S. Navy had established a program of SSBN foreign port visits that continues to this day. Officially, all U.S. SSBN port calls are "operational visits" based on requirements of logistics, or crew rest and recreation, with very few having any specific diplomatic purposes involved

[21] Blechman and Kaplan's comment is based on the earlier work of Blechman and Levinson, which includes the comment. "And the writers are aware of only one visit by a U.S. strategic submarine to a foreign state--aside from the usual Polaris visits to established operational bases at Holy Loch (Scotland), Rota (Spain), and Guam." [Ref. 70:p. 432]

[Ref. 69]. A list of all known U.S. SSBN foreign port visits during the six year period, mid-1983 through mid-1989, is provided in the Appendix.

The data in the Appendix contest the casual inference of Blechman and Kaplan that every U.S. SSBN port visit should be viewed as signalling a special diplomatic event. The scope of these visits suggest, that through SSBN port visits, the U.S. desires to convey strategic support and "presence" in the same manner that a declared and demonstrated 50% deterrent patrol cycle supports strategic deterrence, as opposed to using SSBN port visits only to bolster specific weaknesses in the U.S.-allied strategic deterrent framework.

One special diplomatic case is included in the Appendix data. At the request of the Venezuelan Government, the USS *Simon Bolivar* (SSBN-641) visited Port Cabello in July 1989, during a Venezuelan national holiday [Ref. 69]. This visit (and others) further refutes Blechman and Kaplan's casual inference, since it is doubtful that the Venezuelan Government was in need of strategic support.

Undoubtedly, some SSBN port visits are intended to show strategic support for the host countries, Turkey being one example. While the data of the Appendix shows a larger design, specific port visits by SSBNs and SSNs can continue to be used to convey strategic support. After the submarine departs, an *invisible* "presence" remains [Ref. 8:p. 2n].

D. SOVIET SUBMARINE VISITS TO CUBA 1969-1974

Between July 1969 and May 1974, Soviet submarines called on Cuban ports in a pattern that became progressively more "visible." Gradually, the types of submarines involved escalated from *Foxtrot* diesel-powered attack submarines to a highly publicized visit by a *Golf*-II diesel-powered ballistic missile submarine.

No visits by more advanced boats, e.g. *Hotel* or *Yankee*, have been reported, however, Cuban-based Soviet salvage efforts on behalf of a *Yankee*-class SSBN in 1986 suggest Soviet access to Cuban port facilities has assumed a "strategic" importance. By itself, each successive step was an inconsequential escalation over the previous visit: the first visit consisted of two *Foxtrots* that entered port with a tender, while an accompanying nuclear-powered cruise missile equipped *Echo*-II remained at sea; on the second visit a *Echo*-II accompanied the two *Foxtrots* and a tender into port. [Ref. 70]

Also in 1970, the U.S. detected what appeared to be the beginnings of a Soviet forward submarine base at Cienfuegos. This resulted in a "mini-crisis" that was resolved with a 1970 "understanding" of the 1962 "understanding" concerning U.S.-USSR-Cuban relations. [Ref. 71]

However, the submarine visits themselves continued, each slightly more provocative than the previous, seemingly "probing the margins" of the understandings to test "the strength and endurance of U.S. will and commitments." [Ref. 70:p. 437] Various explanations have been offered for this Soviet behavior: military advantage, signalling as part of the Strategic Arms Limitation Talks (SALT) negotiations, Soviet Navy bureaucratic politics, Soviet-Cuban relations, and testing of U.S. strategic leniency [Ref. 70:pp. 432-7].

Only two *Golf*-II SSBs visited Cuba. The first one, when departing on 6 May 1972, was harassed, being forced to surface several times [Ref. 72]. It has been speculated that this was a *Navy* decision, since both President Nixon and Henry Kissinger attended the Moscow Summit at the time, and were reportedly unaware of this incident until much later [Ref. 71:p. 60]. It is also worth noting that the incident occurred at the same time that final negotiations were in progress

between the U.S. and Soviet navies on the "Prevention of Incidents On and Over the High Seas" (INSEA) agreement and U.S. Navy operational commanders had been "specifically warned to avoid any incidents with Soviet naval ships which might jeopardize the negotiations." [Ref. 21:p. 60]

The Soviet submarine visits to Cuba are an example of the entire spectrum of submarine types being utilized for diplomatic purposes. It also provides an "almost textbook case of Soviet political-military tactics." [Ref. 70:p. 426] Eventually, in 1978 the Cubans received two *Foxtrot*-class submarines for their own navy, perhaps the Soviet effort was intended to pre-condition the United States for this eventual transfer. Whatever its ultimate purpose, the program of Soviet submarine visits used ballistic missile submarines to influence the thoughts and actions of foreign decision makers.

E. SOVIET ANALOGOUS RESPONSE PATROLS

In 1984, the Soviets deployed *Delta*-class SSBNs in an uncharacteristic fashion to the Atlantic and Pacific offshore patrol areas. These deployments augmented the normal patrols of older *Yankee*-class SSBNs. The military impact of the change was minimal and considered more of a political statement targeted at public opinion after a "Soviet pledge to shift additional nuclear missiles closer to the U.S. in retaliation for the American deployment of medium-range nuclear missiles in Western Europe." [Ref. 18] This effort could be considered successful case of "signalling," in that Soviet political objection to the NATO INF deployments was conveyed in an "expressive" use of limited naval force. The "Euro-missiles" were removed from Europe by the INF treaty and the Delta SSBNs ceased the

mid-ocean patrols without fanfare; however, it is ludicrous to suggest that the "analogous response" patrols coerced the U.S. into accepting an INF agreement.

This is a primary example of how an relatively insignificant change in military capability or routine can be used for political effect. The change in SSBN deployment pattern, accompanied by public statement, sent a clear diplomatic and political message, even if it did not appreciably sway the military balance or, for that matter, the NATO decision to go ahead and deploy the "Euro-missiles."

The basic argument of this chapter has been that ballistic missile submarines also have political utility. The logical extension of that argument is that nuclear weapons have political utility. James Tritten [Ref. 73] argues this at length, specific to this event he comments:

> The Soviets are not adverse in using nuclear weapons for peacetime coercion. . . . This deployment served no significant military purpose and was clearly a case of using nuclear weapons to coerce the West. Having the existing forces in their navy allowed the USSR to make a political statement that was otherwise virtually impossible to do. [Ref. 73:p. 216]

This case has been presented in the context of Cable's argument that SSBNs cannot conduct "gunboat diplomacy." This author would agree if the "terms" of gunboat diplomacy had not changed since the phrase was first coined. It is true enough that SSBN "presence" will have little relevance for the U.S. (or Soviet) ability to influence a "conventional" crisis in Asia or Africa. But the modern-day context for military "signalling" is much broader than events in the Third World. For more than 40 years, the two superpowers have sought to influence the others behavior through the implied, i.e. *political* threat of nuclear force. Whether or not they have been successful is besides the point. Nuclear threats are *believed* to have political meaning. By the same token nuclear "signalling" at sea is *believed* to have political content.

While, the superpowers have been content to "signal" back and forth at the strategic level, the future possibility exists that nuclear weapons proliferation may produce a "nuclear pariah state." It is an open question for "responsible" nuclear powers as how best to deter (or coerce) the "irresponsible" nuclear power. The SSBN and nuclear SLCM provide low exposure options that can reinforce political rhetoric at great distances in ways few other nuclear platforms can match. If a "nuclear pariah state" comes into being, perhaps the SSBN (and for that matter, nuclear weapons) will not just be for superpower signalling, anymore.

The majority of this thesis addresses the political utility of submarine force without nuclear weapons and has approached ballistic missile submarines similarly without focusing on nuclear weapons. However, it is obvious that nuclear weapons and submarines are a synergistic combination--strategically, tactically, and politically. Since, naval diplomacy has direct parallels with nuclear deterrence, perhaps the submarine, the best naval platform for nuclear deterrence, has something to contribute to general naval diplomacy.

VII. THE FUTURE OF SUBMARINES IN NAVAL DIPLOMACY

A. A REVIEW

The first chapter of this thesis sought to develope a working definition of "naval diplomacy." Attention was paid to the differences between "latent" and "active," and between "coercive" and "cooperative" forms of "naval force without war." Also considered were the different concepts of the conduct of naval diplomacy that have been offered by different analysts. The central concept of all these theoretical discussions was the threat of force. Theoretically, any armed platform able to operate in the maritime environment is capable of coercive naval diplomacy. It follows from this that the submarine must be viewed as a platform that is at least *capable* of coercive naval diplomacy. However, the *practice* of naval diplomacy requires the *communication* of a threat.

The second chapter addressed the different viewpoints of "experts" on submarines as a useful platforms for naval diplomacy. This showed that the acceptability of the submarine as a naval diplomatic tool turns on the communication issue--most analysts, including some submarine operators themselves, believe that the submarine is intrinsically incapable (or unwilling!) of "credible signalling." Dominating the broad rejection of the submarine's "gunboat diplomatic" value is a, sometimes unstated, paradigm of how naval diplomacy *ought* to be conducted. If readers could examine each paradigm, they will find different assumptions about available force mix, geography, logistics, domestic and international political climate, and threat perception. Most "experts" are evidently skeptical about including submarines in their paradigm of

naval diplomacy; yet their *war-fighting* paradigm would not be without submarines. Some analysts concede a limited applicability for submarines in coercive naval diplomacy, i.e. at the "highest" levels of diplomatic contest: between the superpowers or when a high price in political repercussions is willingly paid for the potential gains of using the submarine violently. This view suggests the following metaphor: the submarine is the "meat clever" of naval diplomacy, while the destroyer, battleship, and aircraft carrier are the "filet knives!" This view does not deny, but it does limit, the submarine's diplomatic usefulness.

Again, it is necessary to return to the idea of communicating a threat. The destroyer, battleship, and aircraft carrier must protect themselves from nonproportional force in violent, "meat clever," fashion. In other words, the credibility of these platforms in delicate, proportional, nonviolent, coercive naval diplomacy in a filet knife manner, ultimately depends on the credibility and capability to dispense meat clever force. Once a naval platform is required to act or react violently, "adequate force" must be used. "Adequate force," not to be confused with the militarily imprudent concept of "minimum force,"[22] is rarely considered proportional about the aim point. Thus, if required to use its weapons, *every* naval platform will dispense *adequate* force. With the proliferation of Third World submarines and anti-ship missiles, adequate force, will require, with increasing frequency, nonproportional force. It should be apparent at this point

[22] Valerie Adams [Ref. 58:pp. 91-2] explains the difference: "This [minimum force] is a widely quoted phrase, but one which has no categorical legal--or military--definition. It means the least amount of force necessary to secure a particular objective, but to be sure of securing the objective, the military must use *adequate* force: that is, enough to be reasonably sure of putting an enemy out of action." (emphasis in original)

that the submarine is awaiting a skilled practitioner of naval diplomacy--a lucid communicator of threats--to pick up the meat clever and deftly, coercively, and proportionally wield it across the entire spectrum of naval diplomacy, as though it were a filet knife.

The third and fourth chapters dealt with arguments that the potential submarine diplomat must be aware of and conversant with. The fifth and sixth chapters considered salient cases of submarines being used for diplomatic purposes. This concluding chapter examines the prospects for the submarine in naval diplomacy.

B. FUTURE PROSPECTS FOR SUBMARINES AS NAVAL DIPLOMATIC TOOLS

1. Impact of Technological Change

Technology can be expected to affect the future role of submarines in naval diplomacy in many different ways. One--negative--possibility is the long-rumored "breakthrough" in anti-submarine warfare that will, somehow, make the oceans "transparent." Although this possibility cannot be ruled out in the long run, all indications are that foreseeable changes range from extremely slim to nil [Ref. 25:p. 13].[23] Another possibility would be (equally unlikely) improvements in "traditional" naval diplomacy platforms, e.g. the creation of a nearly impervious surface ship ASM defense or a doubling of the endurance of carrier-based aircraft. Perhaps the most important technological area from the standpoint of the submarine diplomatist is *communications*. In any case, the basic

[23] Even if the oceans were to become "transparent," the submarine would be no worse off than surface ships, and arguably better, since the submarine would still be able to operate in two instead of one dimension. Also, if the "visibility" argument still held relevance against submarine diplomatic involvement, this "breakthrough" would nullify that line of reasoning.

military principles of flexibility and concentration of force can be met only with difficulty as long as communication constraints limit the submarine to shallow depths and low speeds. Research efforts to improve the submarine's communication envelope for war-fighting purposes will have direct application to the submarine naval diplomatic roles.

2. The Proportional Weapons Debate

The technology to produce a "proportional" submarine weapon exists already today. However for a number of reasons it has yet to be exploited. Those reasons are: first, with the submarine largely being viewed as "unsuitable" for naval diplomacy, the expense has appeared unjustified; second, even if cost were not a restriction, limited magazine space has dictated that valuable warshots take first priority over proportional weapons that may never be used; third, by their very nature, weapons of proportionality do not possess the devastating lethality that is demanded to ensure submarine survivability in the modern high-threat ASW environment. Yet, if submarines are to have a larger role in naval diplomacy, what, if anything, can be done?

There are two basic possibilities. On the one hand, it may be argued that the threat of "disproportionate" force will be a greater deterrent than a proportionate weapon. On the other, the advertisement and employment of a proportionate weapon might improve the credibility of submarine diplomacy.[24] Each position could be true, dependent on the capabilities and perceptions of the

[24] This issue, i.e. the relative effectiveness of the threat of "disproportionate" force vs. the threat of punishment-that-fits-the-crime, is central, of course, to the entire concept of deterrence and includes two opposing "schools of thought:" the "finality of deterrence" approach and the "credibility of deterrence" approach. See, Y. Harkabi, *Nuclear War and Nuclear Peace*, pp. 30-1, Israel Program for Scientific Translations, Jerusalem, 1966.

opposition, but the SSN commanding officer will remain reluctant to displace lethal weapons with proportional ones when deploying to an area of potential conflict.

A proportionate weapons load-out may be acceptable if it is kept quite limited. What is required first of all, however, is an admission that circumstances will indeed arise in which the balance of political considerations and military efficiency will dictate the disablement rather than the sinking of a ship. The sinking of the *General Belgrano* with significant loss of life in a limited naval war "has highlighted at least the *political need in special circumstances* of a way to disable a ship." (emphasis added) [Ref. 74] Still other conditions may dictate the use of damage-inflicting rather than "absolute" weapons. One such condition has been cited by D. A. Paolucci:

> The possible environmental damage to friendly shores and fisheries (e.g., in the Mediterranean or Persian Gulf) caused by the sinking of supertankers might far outweigh the possible military value of such sinkings. Furthermore, the option to disable does not close the option to sink. [Ref. 74]

A proportionate force capability will create new options above and beyond the all-or-nothing choice of today. As such, the national leadership will be able to wield the submarine tool with greater confidence, and deterrence will be strengthened.

One potential drawback is that the intended target of a proportional attack may be too large to be caused appreciable damage (yet the point may be made anyway). Conversely, it may be too small, too old, or too poorly manned to survive, a proportionate attack. Nevertheless, a "disabling weapon" provides a means to lower the *threshold* of "adequate force" available to the submarine. This is not to say that the threshold of "adequate force" can or should be lowered for every conceivable target; for a frigate-size and larger warship target, a single warshot torpedo will remain the threshold of adequate force. The margin of

difference would apply to a target where the old threshold of a single warshot torpedo would be considered an "adequate" overkill.

Opposition knowledge of the limited availability of such weapons on each submarine might provide deterrent incentive. Since firing a "disabling weapon," has proven that submarines are present and that their use is credible, the opposition knows that the next step up the violence ladder will be warshots. Thus, presented with a threat that he cannot defend himself from, combat effectively, or avert, he will be deterred from his intended action.

3. Integrating Submarine Politics and Tactics

A key problem will be how to accommodate the unique requirements of submarine diplomacy within the preferred *operational* employment scheme for U.S. submarines. In actuality, the opportunities and constraints for proportionate weapons use are much like those experienced in limited (submarine) war situations. First, by alerting the opposition to the use of submarines, whether by SPIN or a disabling weapon, the opponent is given the opportunity to prepare, since the nature of the threat is now less uncertain; the opposition's training, material condition, logistics, and strategy can be optimized for ASW. Also, an alerted enemy will be more difficult to manage. The ocean is the submarine's armor, the strength of which is maintained through stealth and by maintaining a tactical advantage. The use of a "disabling weapon" or a SPIN would advertise the submarine's presence and could conceivably seriously degrade the imperviousness of that armor; the submarine may be placed at risk from a "damaged," but militarily still functional target. Alternatively, the submarine may be required to remain in the vicinity of a "disabled" high-political-value target, knowing that enemy ASW force may shortly converge on the "flaming datum."

The preferred tactic from the submariner's view would be for the NCA to make an open political statement defining the threshold of "unacceptable" behavior that will trigger a violent counter, yet would not specify the particular intended method of enforcement. This way the opponents operational uncertainty will be ensured and the chance to optimize his military preparations minimized. When the use of force is called for, the submarine will act or react with adequate force. This will maintain the tactical advantage, minimize risk to the submarine, and also maximize the deterrent effect. Preferably, the submarine can act without being detected, so that the method of enforcement cannot be determined, and the opponent's uncertainty remains.[25] This appears to be a solid, basic naval diplomatic strategy that can accommodate any naval platform. [Ref. 75]

4. The Soviet Union

Arguably, the Soviet Union appreciates, more than any other nation, the political coercive--as opposed to war-fighting--potential of the submarine. Recent technological advances, notably in quieting, have made the Soviet Union's latest generation of submarines more formidable opponents at any level of conflict; one must presume that as Soviet submarine capability improves, so will opportunities to exploit the submarine for diplomatic purposes.

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[25] The preceding two paragraphs are the author's convergence of the ideas of CDR Steve Johnson [Ref. 75] and LCDR Paul Russo [Ref. 69]. CDR Johnson's thoughts are that the submarine's armor is the ocean which it maintains by stealth. Any specific datum (i.e. disabled ships, surfacing, flares, etc.) eats away at that armor. Also, he was the first person to convey to the author that the submarine force is prepared to contribute to the naval diplomatic problem within a limited war-fighting concept. Specifically, the preference for a NCA political announcement that is ambiguous concerning enforcement and with ROE that allow the submarine to sink ships meeting ROE criteria. LCDR Russo's thoughts are specific to the non-desirability of stating a specific enforcement platform, which would allow the opposition time to develope tactics to counter that platform.

On the larger spectrum of general naval diplomacy, the West is anxiously awaiting fleet deployment of the *Tiblisi*-class conventional take-off and landing (CTOL) aircraft carriers. These platforms are without precedent in the Soviet Navy, and consequently there has been considerable debate within the West over how these ships will "fit" in the Soviet Navy's *war-fighting* scheme. Yet, there is little question that "peacetime" missions are likely to include U.S. style "carrier-diplomacy." If so, the U.S. Navy will be confronted with new challenges and new opportunities. For example, a repeat of the U.S.-Soviet fleet stand-offs in the Mediterranean Sea in 1967 and 1973 might this time be highlighted by a confrontation of carrier battle groups, a phenomena not seen since the Pacific theater of the Second World War. The challenge for the American commander will be an unprecedented naval air threat environment. But this challenge will bring its own opportunities as well, for arguably, the presence this time of a very high-value unit, i.e. the carrier, is liable to make the Soviet force more vulnerable to *submarine* coercive diplomacy. Therefore, the political utility of U.S. submarine force will continue to grow in the area of its greatest current applicability, U.S.-Soviet "perception management."

5. The Third World

Perception management concerning in the Third World through the use of submarines must receive greater attention. In the words of Manthorpe, "there is *no reason* to ignore the contributions of the submarine force in Third World perception management." [Ref. 27] The proliferation of anti-ship missiles and submarines poses a mounting threat to the "traditional" paradigm of naval diplomacy. The naval diplomacy environment is becoming more dangerous for the

surface ship and an alarming trend is beginning, whereby, "gunboat diplomacy will become the tool of the little guy." [Ref. 76]

This view foresees the political leadership of the major naval powers as becoming unwilling to risk the tremendous political and military "black eye" resulting from naval assets destroyed or severely damaged by a Third World nation. This will be especially so, if the political leadership is unwilling or unable, for whatever reasons, to go to war against a Third World nation. Thus, to engender this situation the Third World navy must be able to hold "traditional" naval diplomacy platforms at risk with ASMs or submarines, while ensuring that the larger naval power's high-level national interests--issues worth going to war over--are not at stake. This will provide some degree of naval diplomatic autonomy for the Third World navy equipped with advanced weapons.

The use of submarines by the larger naval power offers a practicable competitive naval diplomacy strategy. While, a Third World navy may be equipped with advanced weaponry, such as ASMs or submarines, it most likely lacks sufficient ASW capability to combat the modern SSN. Conversely, ASW is a strong suit of larger naval powers. Short of mine warfare and minor numbers of late generation conventional submarines, at the present, there is no serious threat to the SSN from Third World navies. Thus, the submarine will gain a larger role in naval diplomacy concerning the Third World environment.

C. CONCLUSION

The importance of the submarine in naval diplomacy has been evolving slowly, but in the future the evolutionary pace will quicken. If submarines *currently* have a role to play in naval diplomacy, that role is not on the same order

as frigates, destroyers, cruisers, or even battleships or aircraft carriers; these ships remain the common currency of naval diplomacy. The battleship and aircraft carrier have been trump cards in the past, but have lost their distinction through common usage. The proliferation of anti-ship missiles has made the submarine's, once "disproportionate" threat of force a relatively more appropriate and credible threat. The nuclear attack submarine is becoming a true trump card.[26] It does, however, have its limitations. It is designed now to be used against naval forces, merchant fleets, or for clandestine commando missions, and against land targets appropriate for *Tomahawk*. Likewise, as cited in the works of Cable and Grove, the limited force capability of the submarine is now confined near the upper bound of naval diplomacy. Its most efficient use would be, in effect, nonuse; but, nonuse with benefit can only occur after announcement and previous establishment of credibility.

A trump card is held back as long as the player remains strong in the suit of appropriate force being played. As the game progresses, the cards of the appropriate force suit dwindle in number. When appropriate force is exhausted or unproductive, the trumping force of the submarine can gain control of the game. A trump card is led only from a position of extraordinary strength or weakness.

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[26] The game of Hearts provides an appropriate analogy. The object is to force points on your opponents. There is one point suit, hearts, and one trump suit, spades. Additionally the Queen of Spades counts 13 points, equal to the total of heart points. In a four handed game each round of the table is called a trick, and the ranking card wins the trick (and any points contained). An alternate strategy is to win all the points. This should only be pursued from a position of great strength, but it scores 26 points against all opponents. The person that wins the trick gains control of the game for the next trick, he chooses the suit to be played with the first card led. The led suit must be followed if possessed. The cards played are low to give up control, and high or trump to gain or keep control. Points, trump, or cards of a neutral suit are dumped in the trick when players are exhausted in the suit played.

Weakness here, may be an untenable anti-ship missile threat, or a submarine being the only platform available. Strength in this analogy corresponds to non-limited warfare and does not apply. While naval diplomacy proceeds with appropriate force, the presence of the trumping submarine must be assumed or communicated. A possible weakness of present U.S. naval diplomacy is that the trump is not placed in the hand when dealt; adversaries have little indication that it may be in the deterrent hand. Adversaries must be *made* cautious not to exhaust the suit of appropriate force, they must be *made* wary of the deterrent trump. The choice to play trump is a strategic one, having both short and long term costs and benefits. Tactical implications are very short term concerning the hand being played.

This analogy is not an effort to trivialize naval diplomacy to a common card game, but an attempt to explain why submarine *violence* is, and should be, seldom seen in naval diplomacy. Submarine violence should be seldom seen because it is credible and is not required at lower force levels of naval diplomacy. When submarine presence is disclosed, credibility should make the actual use of force seldom required. Submarines are seldom seen, because the art of applying limited naval force is most often practiced in an environment of lower force levels, where submarines are not required and might be considered extraneous and escalatory. At the higher levels of limited naval force, where survival requires the use of non-proportional weapons, the limited force capability of the submarine is potentially credible. However, institutional biases prevent this potentially credible force from making a contribution to diplomatic leverage, even at this level. Thus, submarine diplomacy remains incredible to the opposition at the lower levels as a deterrent to escalation to higher levels. To the casual observer

during the course of the card game it may be many rounds before trump is played. That does not mean that trump is not present in the players hands. If naval diplomacy does not come to violence, or if the violence can be contained to the visual combatants, the submarine, if present, will not be called upon to participate. Thus, the presence of the submarine could be denied; however, it may be a better choice not to deny it.

This study suggests these recommendations for action to provide a greater understanding and improve the credibility of the submarine in naval diplomacy:

- Incorporate scenarios of coercive naval diplomatic SSN usage into existing naval planning, training, and exercise infrastructures.
- At the NCA level, investigate the requirements for the SPIN, including methods of transmittal for different crisis scenarios. Also, provide feedback to the Navy on acceptable SSN employment scenarios.
- Initiate a viability analysis on the production and use of proportional weapons in submarine diplomacy.
- As the opportunity presents itself, gradually increase employment of SSNs in the naval diplomacy role to condition domestic and international acceptance and improve the credibility of submarine diplomacy.

Finally, it must be reiterated that several aspects are making the use of submarines more practicable in modern naval diplomacy. First, the diminishing distinction between the nonproportional weapons of surface ships and submarines in the missile age. Second, the submarine is unthreatened by anti-ship missiles and the multiple platforms that carry them as opposed to surface ships which may be required to protect themselves prematurely. And third, as more Third World nations obtain ASMs and submarines to defend their "claimed" 200 nautical mile exclusive economic zones, greater threats will be met as opposition in naval diplomacy. The SSN is a single credible platform to oppose these threats, as contrasted to the multitude of surface combatants required to provide the same

level of opposition; or more simply stated, one stealthy, ubiquitous SLCM carrying SSN can fullfil several (but not all) of the traditional naval diplomacy duties of an entire carrier battle group and defend itself inexpensively and effectively. It is time to start thinking with greater frequency in terms of submarine diplomacy.

APPENDIX

U.S. SSBN FOREIGN PORT VISITS, MID 1983 – MID 1989[27]

DATE	LOCATION
1983	
1 JULY	LISBON, PORTUGAL
13–16 JULY	LISBON, PORTUGAL
18–21 JULY	PORTLAND, U.K.
9 AUGUST	NOVA SCOTIA
5 SEPTEMBER	LISBON, PORTUGAL
5–8 SEPTEMBER	LISBON, PORTUGAL
6–9 SEPTEMBER	HALIFAX, NOVA SCOTIA
16–19 SEPTEMBER	NAPLES, ITALY
27–30 SEPTEMBER	PORTO DOS BUXOS, PORTUGAL
29 SEPTEMBER–3 OCTOBER	BREMERHAVEN, FRG
11–14 OCTOBER	ROSYTH, SCOTLAND
21–24 OCTOBER	PLYMOUTH, U.K.
6–9 NOVEMBER	AGADIR, MOROCCO
1984	
20–23 JANUARY	LISBON, PORTUGAL
6–9 FEBRUARY	BRIDGETOWN, BARBADOS
8–11 MAY	PORTLAND, U.K.
14–17 MAY	NAPLES, ITALY
25–28 MAY	ROOSEVELT ROADS, P.R.
4–7 JUNE	PORTLAND, U.K.
23–27 AUGUST	FREDERIKSTED, ST. CROIX
3–6 SEPTEMBER	BRIDGETOWN, BARBADOS

[27] This data was compiled from the patrol reports of U.S. SSBNs. The current *Poseidon* operational base at Holy Loch (Scotland) and previous operational bases at Rota (Spain), and Guam would not be included in this data. In the early 1980s *Polaris* and *Poseidon* submarines were removed from the Pacific deterrent patrol cycle as *Trident* submarines came on line. After that, Guam was no longer an operational base for SSBNs; thus, visits to Guam by *Trident* submarines along with other visits to U.S. protectorates, for the purposes of this documentation, are treated as foreign port visits.

Also of note, the author participated in the port visit of USS *Thomas Jefferson* (SSBN-618) to Chinhae, Korea in August 1980. Thus, it could be presumed that the Pacific *Polaris* and *Poseidon* submarines during the late 1970s and early 1980s had a visiting frequency similar to those depicted in the Appendix.

9–13 NOVEMBER	ROSYTH, SCOTLAND
20–23 NOVEMBER	NAPLES, ITALY

1985

1–5 JULY	NAPLES, ITALY
10–13 SEPTEMBER	PLYMOUTH, U.K.
11–14 OCTOBER	BRIDGETOWN, BARBADOS
30 DECEMBER 85–2 JANUARY 86	LISBON, PORTUGAL

1986

13–17 JANUARY	FREDERIKSTED, ST. CROIX
14–17 JANUARY	HALIFAX, NOVA SCOTIA
21–25 JANUARY	BRIDGETOWN, BARBADOS
10–14 FEBRUARY	NAPLES, ITALY
21–24 APRIL	HALIFAX, NOVA SCOTIA
14–17 MAY	ZEEBRUGGE, BELGIUM
26–29 JUNE	PLYMOUTH, U.K.
3–7 OCTOBER	AGADIR, MOROCCO
1–4 DECEMBER	PORTLAND, U.K.

1987

16–20 JANUARY	BERMUDA
28 FEBRUARY–3 MARCH	NAPLES, ITALY
20–25 APRIL	HALIFAX, NOVA SCOTIA
2–5 JUNE	HALIFAX, NOVA SCOTIA
27 AUGUST–1 SEPTEMBER	HALIFAX, NOVA SCOTIA
14–17 SEPTEMBER	BERMUDA
24–28 SEPTEMBER	ROOSEVELT ROADS, P.R.
4–7 DECEMBER	NAPLES, ITALY
10–15 DECEMBER	PORTLAND, U.K.
18–22 DECEMBER	ST. CROIX
18–22 DECEMBER	BERMUDA
30 DECEMBER 87– 5 JANUARY 88	HALIFAX, NOVA SCOTIA

1988

5–10 JANUARY	HALIFAX, NOVA SCOTIA
5–8 FEBRUARY	GUAM
24–29 FEBRUARY	LISBON, PORTUGAL
25–29 MARCH	AGADIR, MOROCCO
11–14 APRIL	PLYMOUTH, U.K.
14–19 APRIL	LISBON, PORTUGAL
23–28 APRIL	FASLANE, SCOTLAND
20–23 JUNE	LISBON, PORTUGAL
14–18 OCTOBER	NAPLES, ITALY
7–10 NOVEMBER	PORTLAND, U.K.
30 DECEMBER 88–3 JANUARY 89	LISBON, PORTUGAL

1989

7–11 JANUARY	PLYMOUTH, U.K.
23–25 JANUARY	NAPLES, ITALY
9 FEBRUARY	LISBON, PORTUGAL
8–11 MAY	LISBON, PORTUGAL
21–25 JULY	PORT CABELLO, VENEZUELA

Source: Naval Operations Intelligence Center, Suitland, Maryland.

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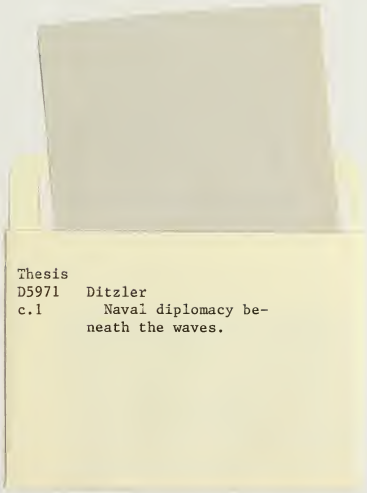
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